

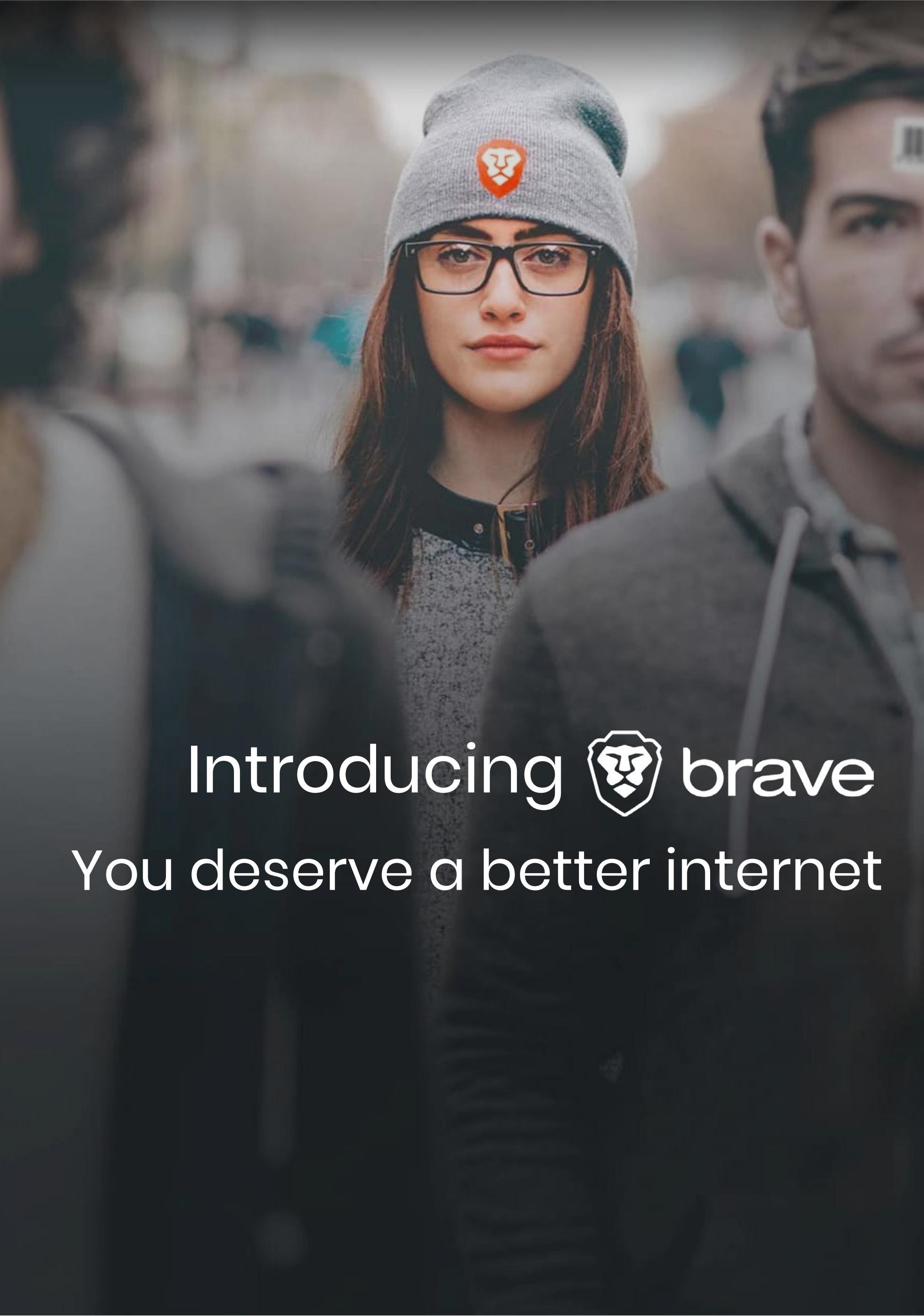


brave

1.0 Release Reviewer's Guide

PR Contact: Catherine Corre — press@brave.com

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Brave is a browser, but it's much more than that.

Brave is a fundamental shift in how users, publishers, and advertisers interact on the Internet. To understand Brave's unique approach, it helps to consider a bit of Internet history.

The first Internet banner ad appeared in 1994. It was for Hotwire and received a 44% click through rate.¹ It was relatively unremarkable at the time, but it implied the promise of a “free” web — paid for by advertisers. An entire new industry, ad-tech, developed out of that first small step. Multi-billion dollar companies popped up, providing software for “free”, where the real price was harvesting information about you to fuel the ad economy.

¹ [Atlantic](#)

This was very successful. Today, the global market for digital ads is \$330 billion.² But this success came at a cost: the emergence of what we now know as the surveillance economy. Users suffer the most. One test, for example, found users being tracked by nearly 50 companies when reading a New York Times article online.³ Mobile load times suffer and batteries drain quickly. In Brave's tests, over 60%⁴ of the data used when viewing typical news pages goes to downloading these trackers. You end up paying your cell phone provider for the privilege of sending your private browsing data to a mega-corp that makes money on it. And everyone faces unprecedented levels of malvertising and ransomware.

Publishers have not fared much better. News publishers saw their revenues decline by tens of billions of dollars in the transition from print to digital. They assumed greater distribution would bring higher revenues. They were wrong. Because of the large ad-tech tolls, publishers receive as little as 35% of the value of ads that run on their own sites.⁵ At the same time, Google, Facebook and Amazon have captured 70% of all digital ad spending.⁶ Advertisers have suffered too, facing increasing levels of fraud. The online ad fraud rate is estimated to reach \$42 billion in 2019.⁷

Enter Brave. Brave is the browser re-imagined.

Brave starts by putting you back in charge. Brave provides substantial improvements in speed, privacy, security, performance, and battery life — typical page loads are 3x to 6x

2 [eMarketer](#)

3 [New York Times](#)

4 Averaging over a selection of news articles loaded in Brave and in Chrome on a Samsung J7DUO Android device.

5 [Acxiom](#)

6 [Marketing Land](#)

7 [Juniper Research](#)

faster in Brave.⁸ Brave does this by blocking data-grabbing trackers and invasive ads. If you use Brave, you have the choice to opt-in to privacy respecting ads and receive rewards in frequent flier-like tokens for the ads you view. These tokens can be used to support content creators: website operators, and anyone who publishes to YouTube, Twitch, GitHub, Twitter and any number of other sites. Support the people who make the things you love. Or, you can keep the tokens and exchange them for currency. Early next year, it'll also be possible to redeem them for subscriptions, gift cards, discounts and more.

This is all possible because Brave is built on top of the first global private ad platform, designed from the start to value your attention and privacy — and to provide a sustainable economic foundation for content creators.

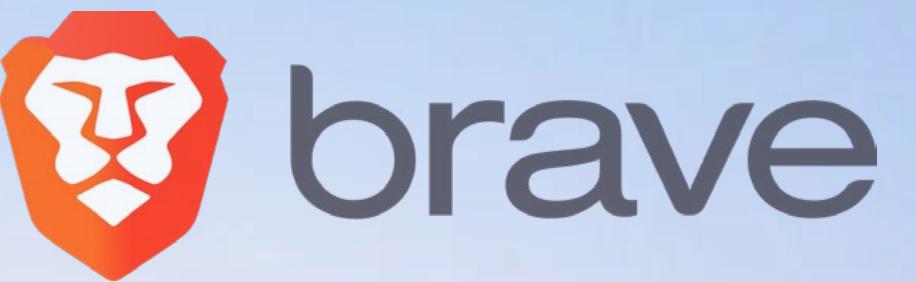
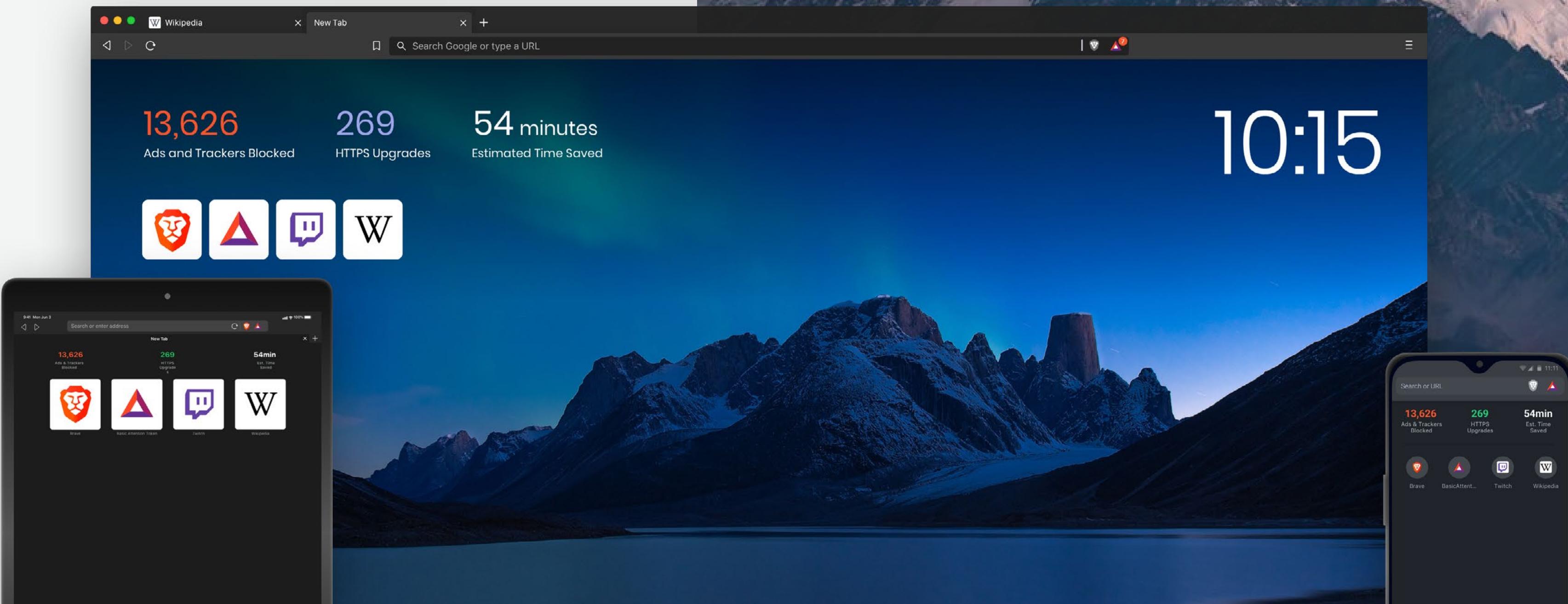
Brave is a super powered browser that gives you unprecedented speed, privacy, security and battery-life. It's integrated with the first global private ad platform that rewards you when you opt in to see privacy respecting ads. You can keep the rewards, or pay it forward to the content creators you love.

Brave is built on the solid foundation provided by Chromium and the Blink rendering engine, with all Google's tracking and signalling removed. Chromium and Blink give Brave a fast, modern, secure browsing core that is supported by web and extension developers. This robust baseline lets the Brave team focus on the features which protect your privacy, reward you for browsing, and support the sites you love. Using Brave today gives you a glimpse into a future where your privacy is respected and you directly support the sites

⁸ See full test details later.

you visit. It works with your favorite Chrome extensions so switching over is a breeze. You'll appreciate the streamlined look, and you'll love how much faster it feels.

Brave is available for Windows, macOS, Linux, Android, and iOS, in 52 different languages and is used by over 8 million people monthly, worldwide. Brave has 300,000 verified content creators,⁹ including The Washington Post, The Guardian, Slate, Wikipedia, & the Los Angeles Times and major brands advertising, including Intel, Pizza Hut, Home Chef and more.

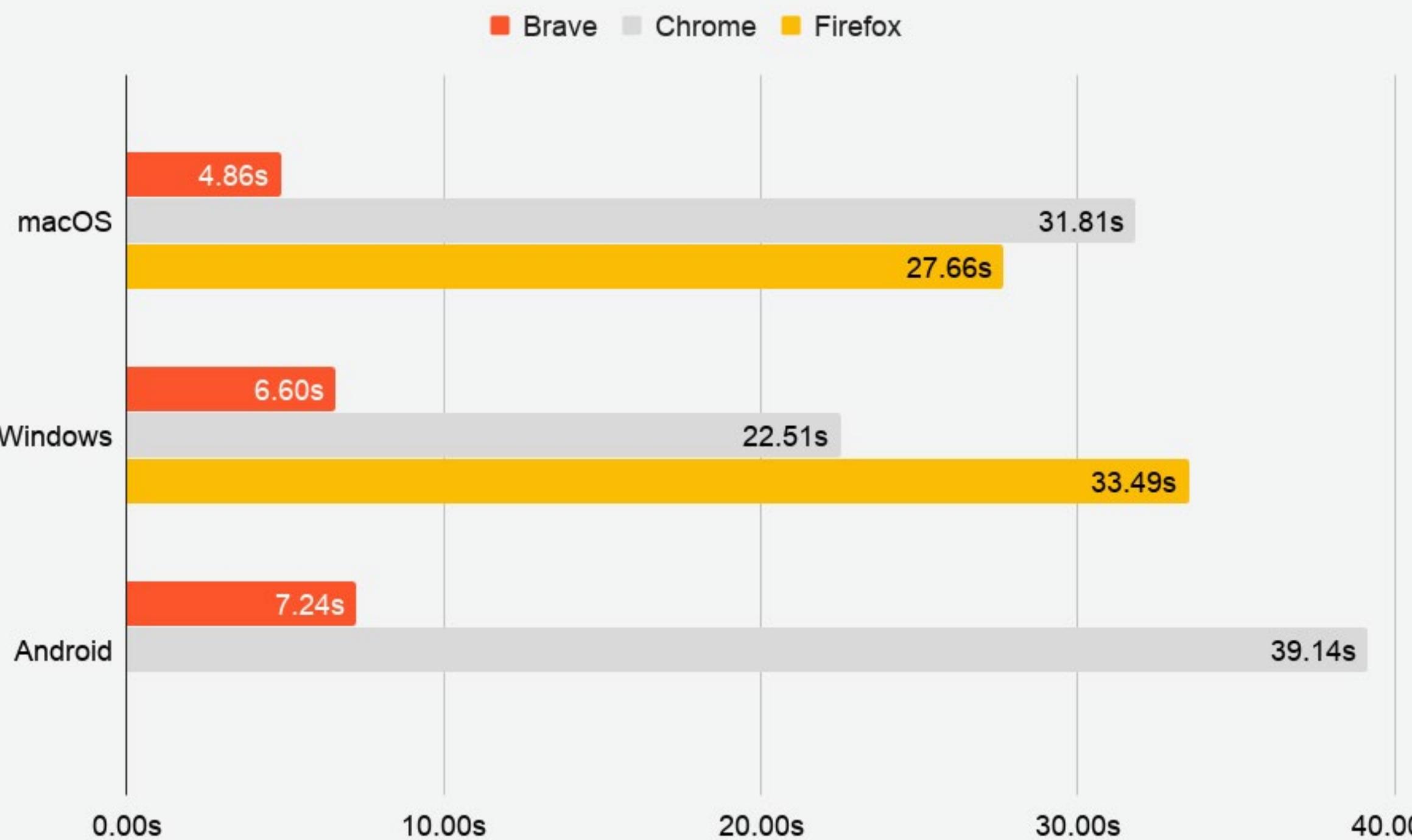


Privacy By Default: Browser Comparison

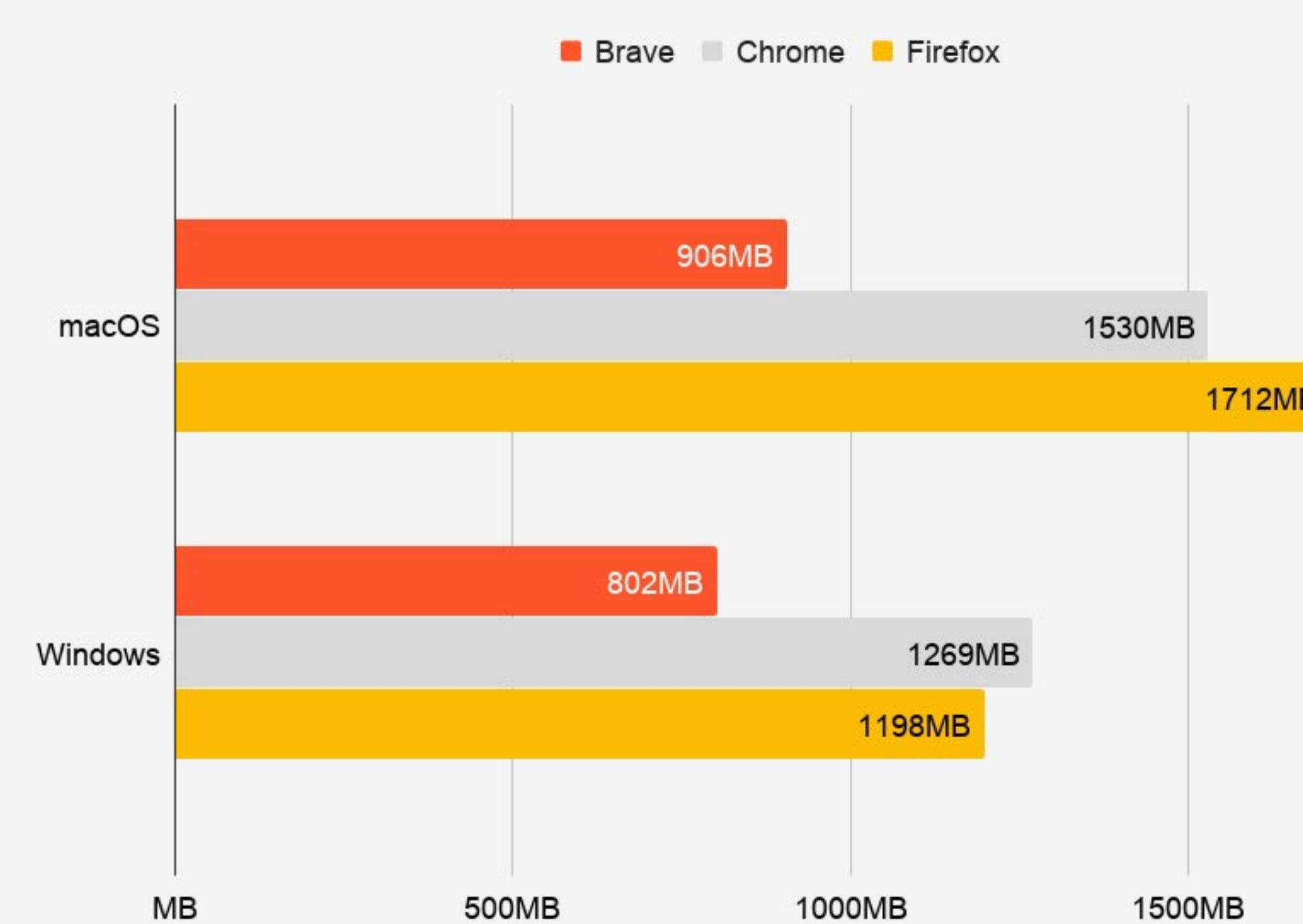
	Brave	Firefox	Safari	Chrome
Network privacy	Private browsing with Tor	No protection	No protection	No protection
Cross-site trackers	Blocked by default	A few blocked by default	No protection	No protection
Invasive ads	Blocked by default	No protection	No protection	A few blocked by default
Cross-site tracking without cookies (fingerprinting)	Blocked by default	Limited protection	Limited protection	No protection
Tracking cookies	Blocked cross-site by default	Blocked on some domains	Blocked cross-site by default	No protection
Secure connections (HTTPS)	Automatic upgrades from HTTP when possible	No added protection	No added protection	No added protection
Malware & phishing	Google Safe Browsing, plus privacy protection	Google Safe Browsing	Google Safe Browsing	Google Safe Browsing

Performance Overview

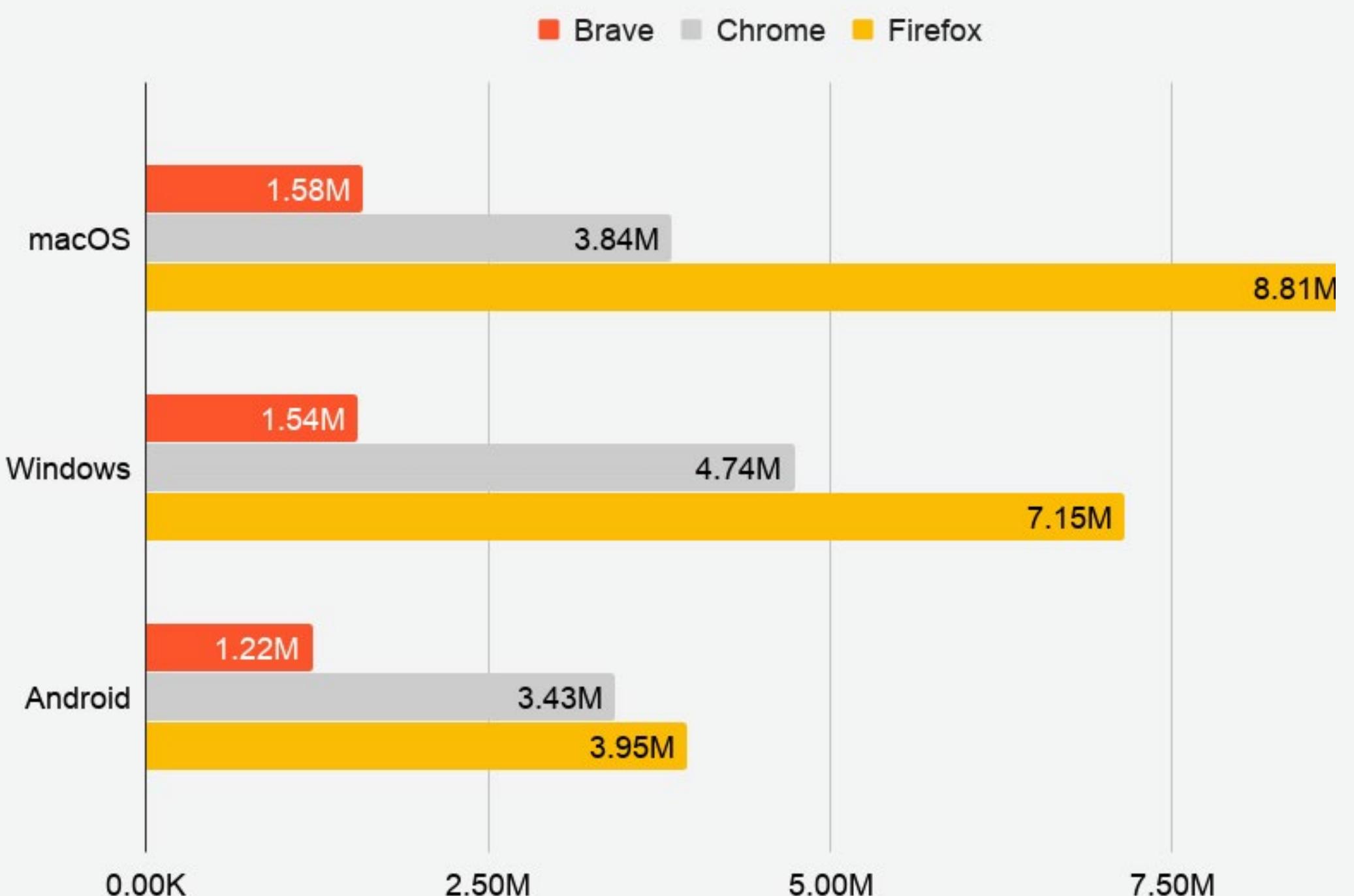
Page load time



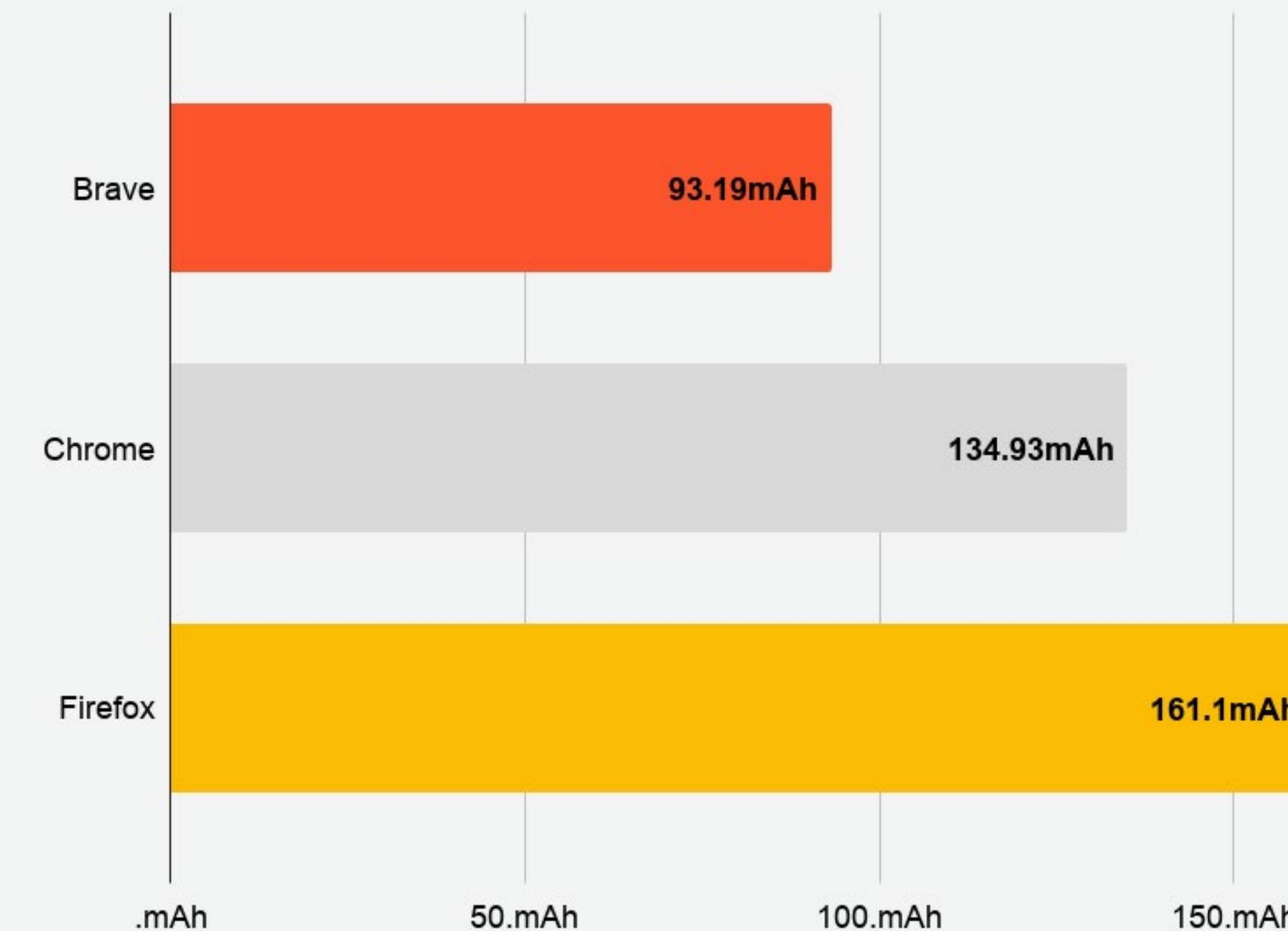
Memory usage



Data use



Power use (Android)



Brave Key Features



Brave Shields

- Blocking cross-site ads & trackers
- Automatic HTTPS upgrades
- Script blocking
- Cross-site cookie blocking
- Device recognition blocking (fingerprinting protection)
- Social media blocking

Brave Rewards

- Brave Ads
- Basic Attention Token
- Verified wallets
- Auto-contribute
- Tips

General

- Brave Sync
- Built on Chromium
- Brave look and feel
- Light and dark theme
- Chrome extension compatibility*
- Private Browsing with Tor*
- IPFS support built-in*
- Crypto Wallets*
- WebTorrent*

* Desktop only

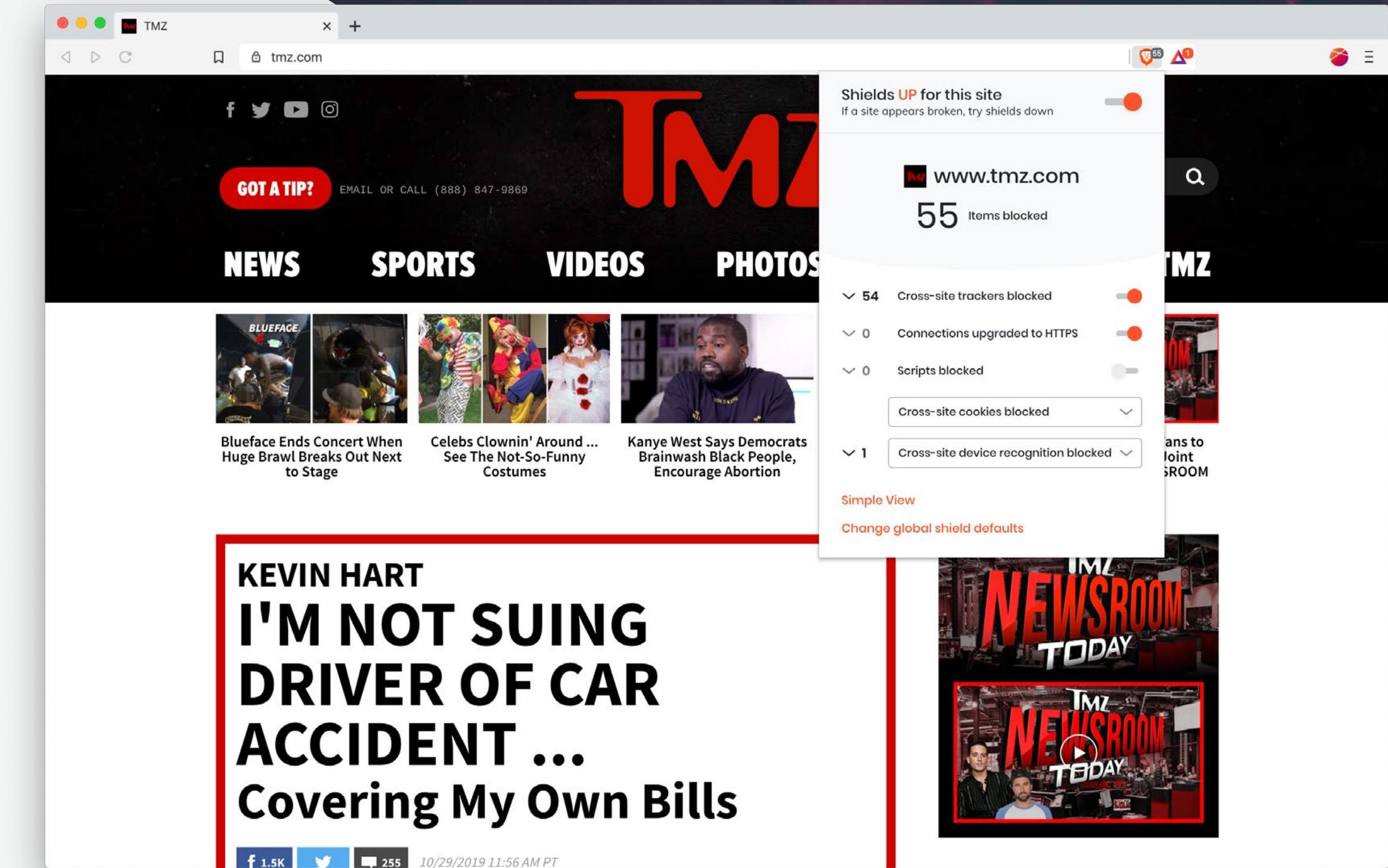
1. Brave Shields

Our top priority is protecting your privacy.

Shields up!

Nobody needs to know your browsing habits and history but you. Brave Shields prevent online trackers from following you around the web. Even Brave Software doesn't know what you're doing — Shields operates entirely on your device — so you can keep your business to yourself. Shields block trackers and the ads that rely on them right out of the box; you don't need to switch on or configure anything. Browse the web confident that nobody's making a dossier of your interests and reading habits. The Shields button is in the address bar.

Brave combines curated lists of known ads & trackers used by the most popular ad-blocking extensions along with



in-browser heuristics and cloud-based machine-learning. This lets Brave block well-known trackers efficiently and still catch sneaky behavior even when the trackers haven't made it onto a list yet. All this ensures that the most dangerous snoopers are always blocked — leaving you with just the content you actually want to enjoy.

Shields makes sites faster. Most sites are covered in tracking elements that slow down your browsing, burn through your battery, and waste your mobile data. Brave doesn't allow any of that. And since Shields is built directly into Brave, the performance is much better than doing the same thing using an extension. More on Brave's speed benefits later.

Blocking extraneous nonsense doesn't just protect you from tracking, save your battery, and cut loading times, it conserves your attention too. Less time looking at flashing ads and distracting videos means more time reading what you're there for — or getting away from your screen. Shields is even more important on mobile, where browser extensions are much harder to come by. If privacy features aren't built into your browser, they probably aren't available. And Brave is also the only browser to support secure phishing-resistant login with robust security keys on iOS, thanks to a direct integration with Yubico.

Shields UP for this site  If a site appears broken, try shields down

TMZ www.tmz.com

55 Items blocked

▼ 54 Cross-site trackers blocked 

▼ 0 Connections upgraded to HTTPS 

▼ 0 Scripts blocked 

Cross-site cookies blocked 

▼ 1 Cross-site device recognition blocked 

[Simple view](#)

[Change global shield defaults](#)

HTTPS Upgrades

Brave automatically upgrades connections to HTTPS to prevent snooping. HTTPS protects your confidential information — like passwords — from being stolen, and hides which pages you read from anyone listening in. It also makes it harder to selectively block the sites you visit. Plenty of sites support HTTPS but don't use it by default. Shields switches over to the secure version without you having to worry about it.

Block scripts, cookies, and device recognition

By default, Shields blocks cross-site cookies (aka third party cookies) and other local storage. You can also choose to accept or block all cookies.

Shields also resists sites that try to recognize the distinctive features of your device and then use that individual “fingerprint” to follow you across the web without relying on cookies — a form of tracking often just called “fingerprinting”. These sites often try to detect specific hardware, or notice lots of little details about your system. Shields makes that much harder.

Shields gives you an advanced option if you want to see which scripts are present on a page, so you can pick and choose which ones to run and which to block.

Social media blocking

If you don't use a particular social media site, you might not be interested in seeing posts from that site elsewhere on the web. If you can see content from a social media site somewhere else on the web, there's a good chance that company is watching you back. Brave lets you block embeds from Facebook, Twitter, and LinkedIn.

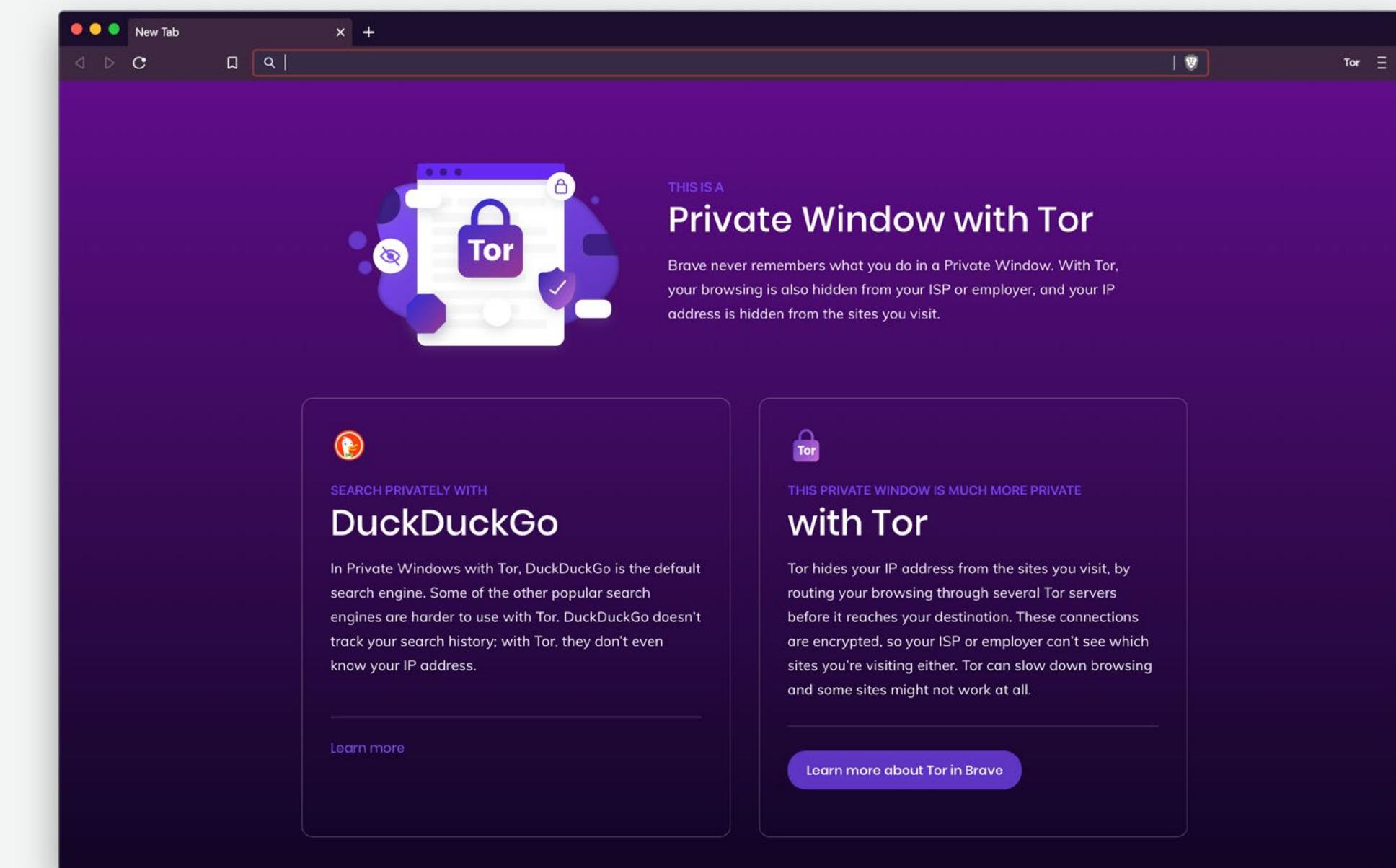
Private Browsing with Tor

Brave is the only general-purpose browser whose private browsing mode protects you from the sites you visit as well as from people who might rifle through your computer later. Most browsers' private browsing modes simply avoid creating browsing history on your device. Brave has private windows that use the Tor online anonymity network to hide you from the sites you visit too.

Using Tor in a private window means that sites don't get to see your IP address when you visit. In regular browsing, your IP address probably doesn't change much, so sites can use it pretty reliably to follow your activity. Anonymizing network connections with Tor works together with Brave's other privacy protections to make it extremely difficult even for the sites you visit to know that different connections come from the same person. When you come back to a site later in a private window with Tor, the site has no way to know you're the same person — you could be anyone

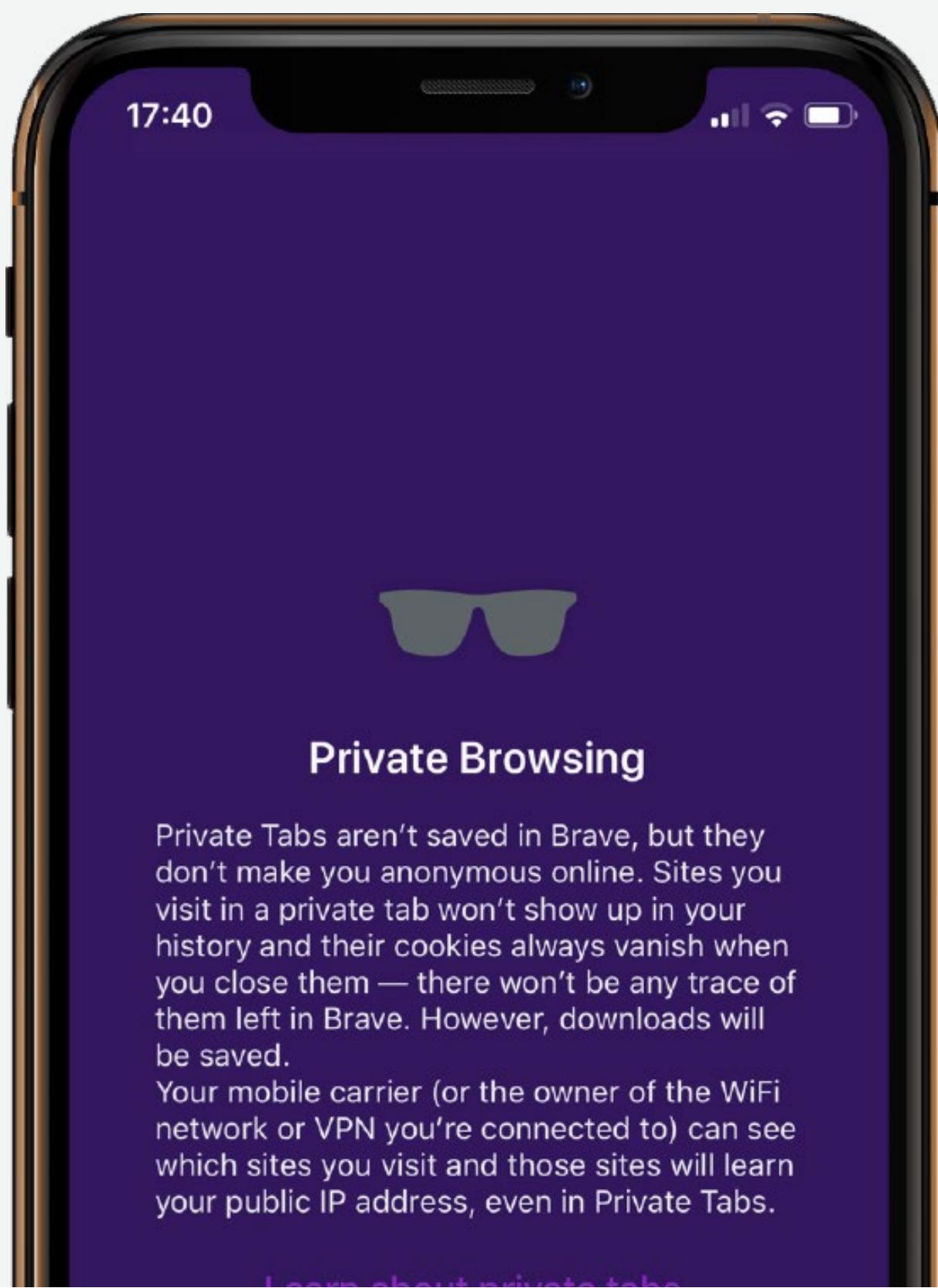
who's using Brave. In addition, Brave's Private Browsing (with and without Tor) offers DuckDuckGo as the default search engine, so you can easily combine private browsing with private search.

Tor also gives you access to a whole additional network of Onion sites that aren't accessible from most browsers. More on that later.



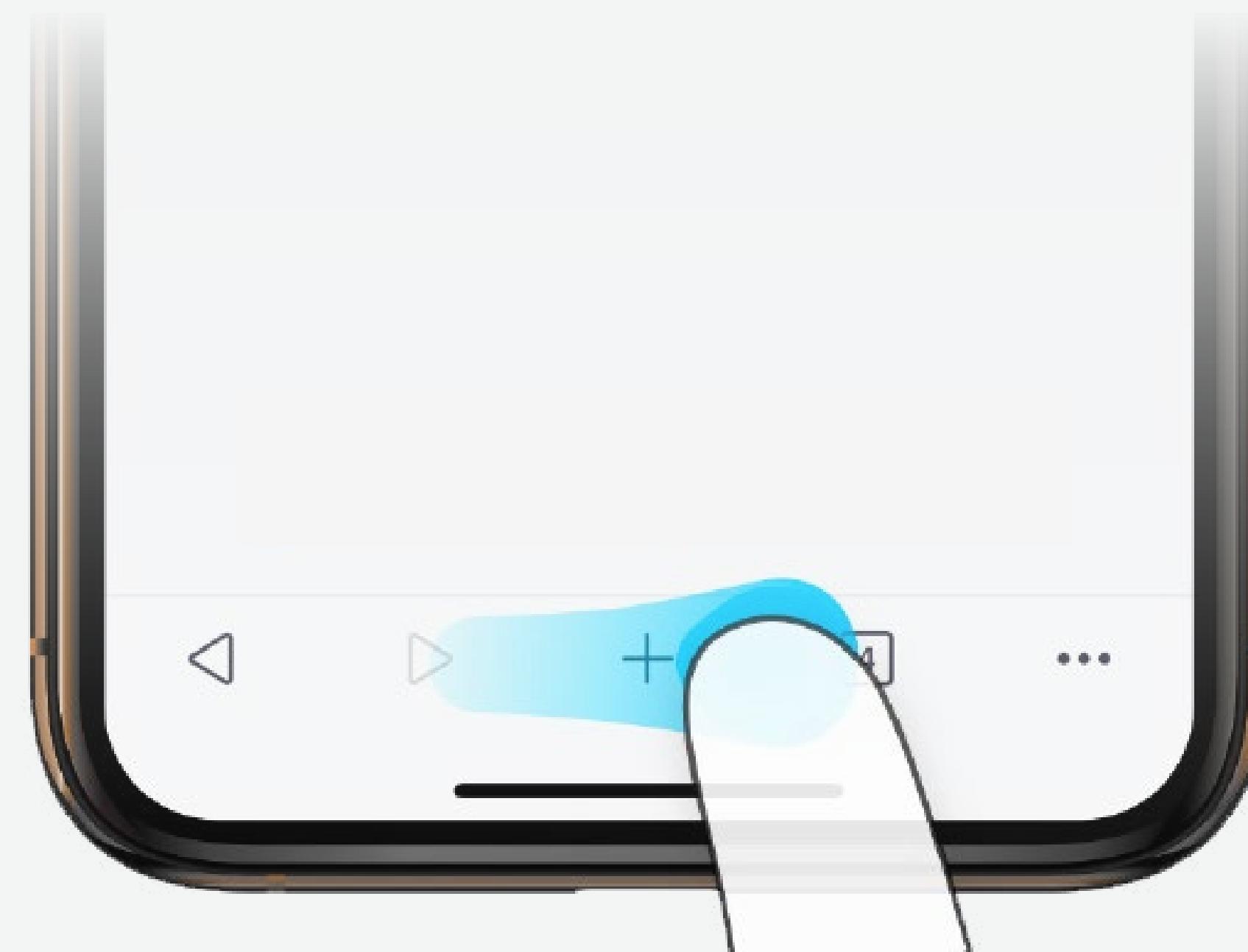
Mobile Details

Brave on iOS offers a “Private Browsing Only” mode. When enabled, all trackers, cookies and history are deleted whenever you completely close the app. You can also lock the app with Face ID or Touch ID to protect against casual snooping.



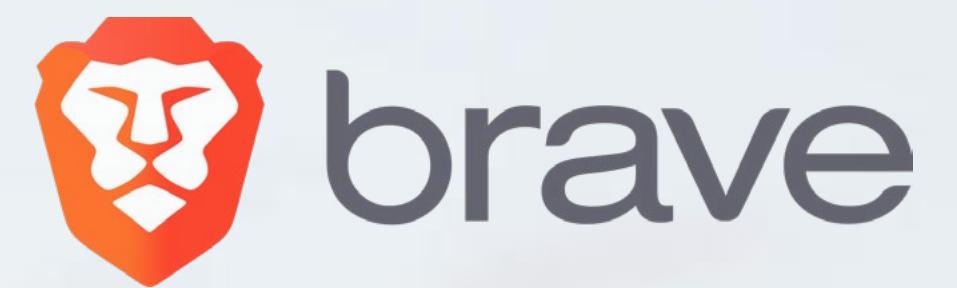
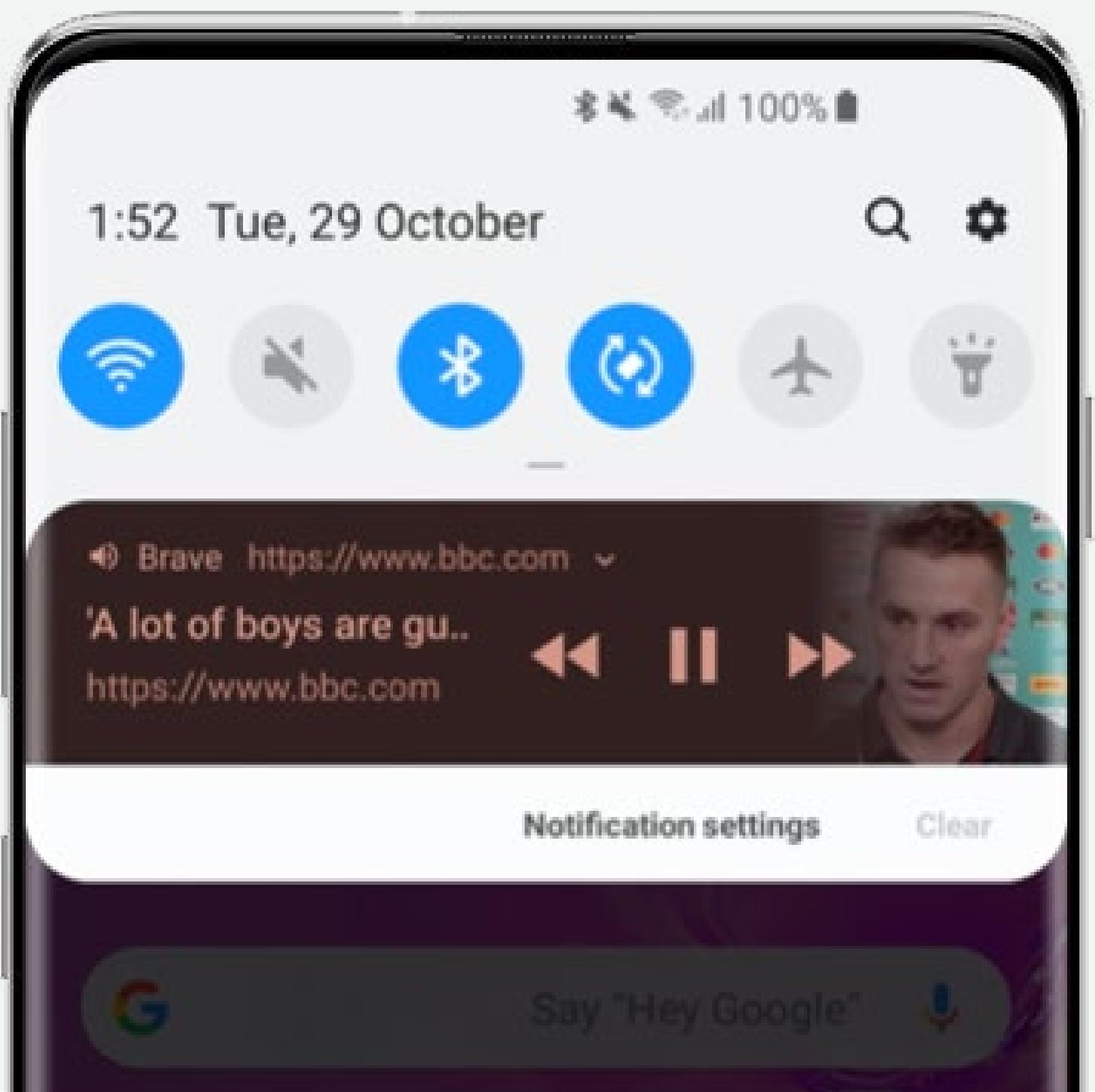
Thumb-Friendly Browsing

Brave for iOS and Android are built with a focus on thumb-friendly browsing. You can swipe right or left on the bottom menu to carousel through your tabs. You can also pick a different search engine to use in private tabs.



Background Playback

Ever open a video in your mobile browser and want to keep it playing while you respond to a text or look up directions? With Brave's background video play on Android, video keeps playing in the background and from the lock screen, so you can keep listening. Perfect for commuting!



2. Brave Rewards

A new way to get rewarded for your attention and to support your favorite content creators

Brave Rewards is the first rewards program built into a web browser. When you use Brave Rewards, you earn Basic Attention Tokens (BAT) by viewing privacy respecting ads. Currently, a typical engaged user earns around \$5 USD a month. Over time this figure will vary depending on region and other factors. Brave picks the right ads to show you based on your everyday browsing, but your private information never leaves your browser. You are the only person who has access to your profile. Even Brave Software can't see it.

You can use these earnings to support the sites you enjoy, like Wikipedia, news sites, or YouTube channels. You can even tip individual creators directly on sites like Twitter and



Twitch. With Uphold, you can convert those rewards into cash. Soon, you'll be able to use BAT for premium content and subscriptions, or redeem it for real-world rewards such as hotel stays, restaurant vouchers, and gift cards via TAP Network's 250,000 brand partners.

There are over 300,000 publishers, websites, and content creators in the Brave Rewards ecosystem. This includes news sites like The Washington Post, The Guardian, Slate, and the LA Times, as well as everyday people who post on YouTube, Vimeo, Twitch, and Twitter.

The image shows the Brave Rewards interface within a web browser window. The background of the browser is a scenic mountain landscape.

Brave Rewards

Ads

Earn tokens by viewing ads in Brave. Ads presented are based on your interests, as inferred from your browsing behavior. No personal data or browsing history ever leaves your browser.

Estimated pending rewards: 3.70 BAT (0.85 USD)

Next payment date: Nov 5

Ad notifications received this month: 56

7-day Ads History

Auto-Contribute

An automatic way to support publishers and content creators. Set a monthly payment and browse normally. The Brave Verified sites you visit will receive your contributions automatically, based on your attention as measured by Brave.

Monthly Payment: Up to 10.0 BAT (2.31 USD)

Wallet Verified

86.4 BAT (20.30 USD)

Grants

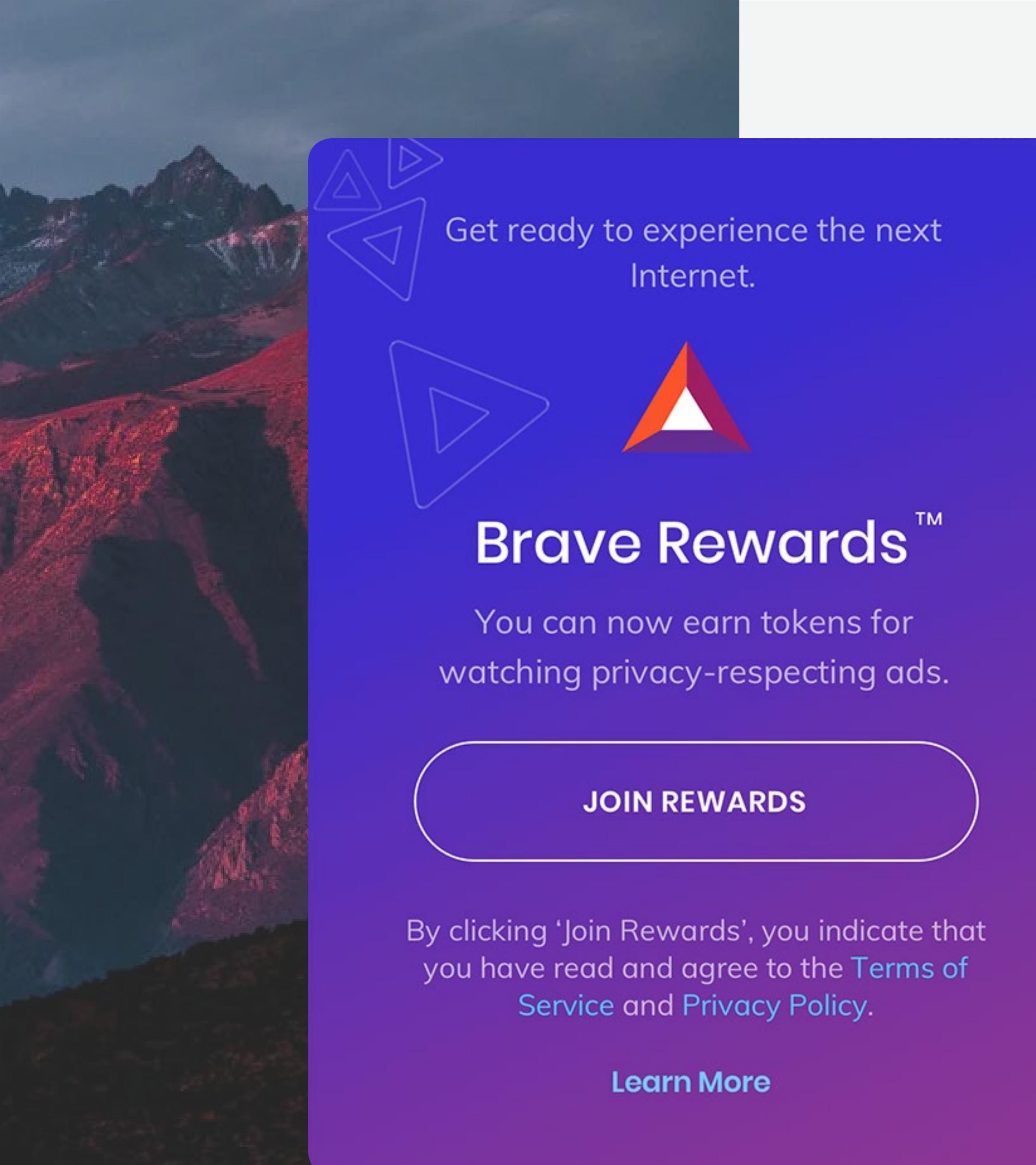
Add Funds Withdraw Funds

REWARDS SUMMARY OCTOBER 2019

Earnings from Ads	29.5 BAT (6.98 USD)
Auto-Contribute	-1.0 BAT (0.24 USD)

Add, withdraw and manage funds at Uphold.

Brave Rewards is built on the Basic Attention Token. Learn more about BAT [here](#)



Turning on Brave Rewards

When Brave is first installed, you're asked whether you'd like to use Brave Rewards. If you skipped this step, you can enable **Brave Rewards** by:

1. Clicking the Rewards icon in the address bar, then Rewards Settings,
2. Clicking  App Menu > Brave Rewards,
3. or on desktop, typing **brave://rewards** into the address bar.

Rewards is entirely opt-in and is off by default.

Start Earning with Brave Ads

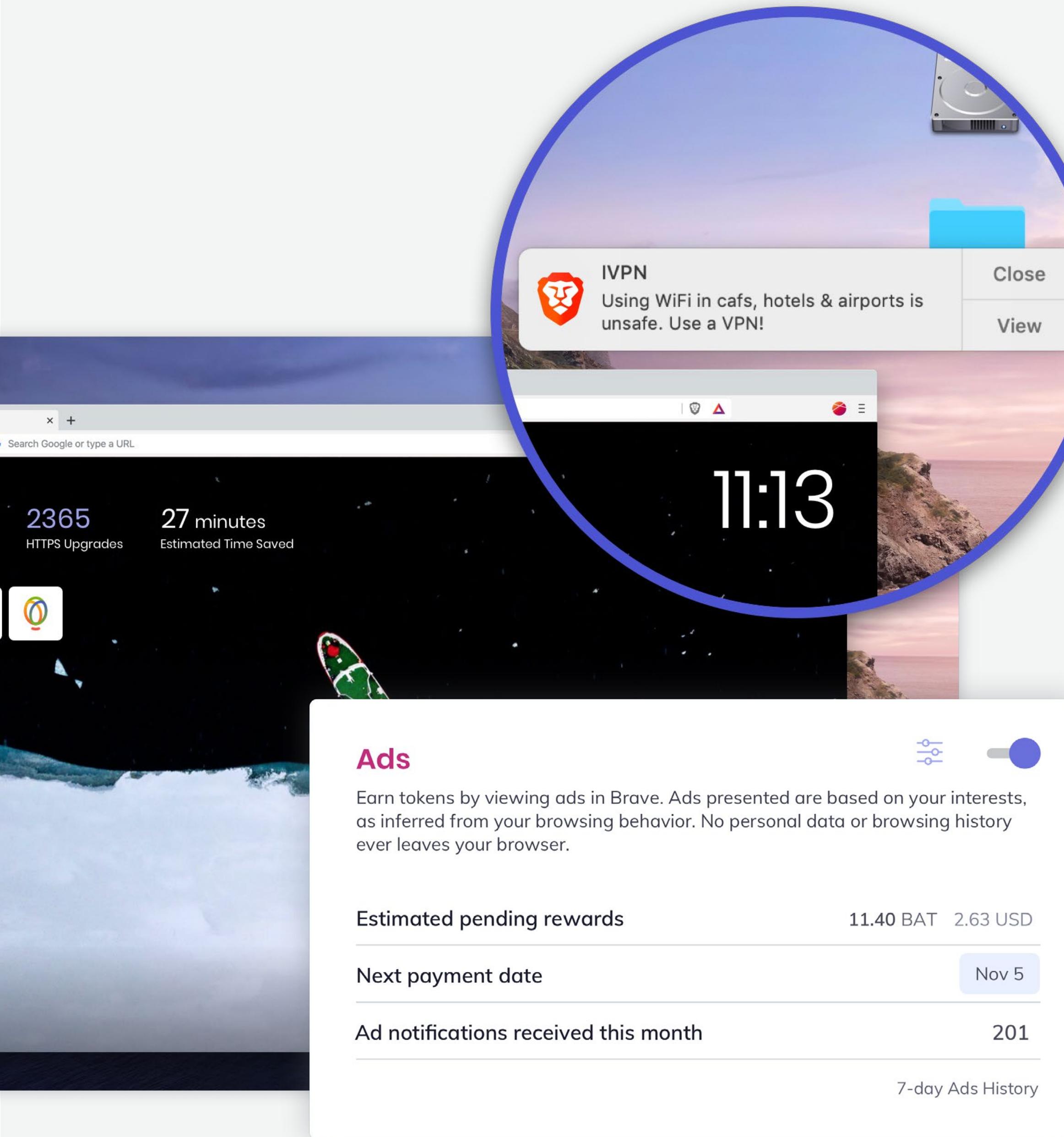
Like other rewards programs where you earn miles or points, in Brave Rewards you start earning BAT by viewing ads.

Brave offers a fully private opt-in ad system where advertisers reward you for your attention. Every month you earn 70% of the BAT that advertisers spend on ads, while Brave receives the remaining 30%. [Brave's transparency data feed](#) show these transactions live, as they happen.

Brave Ads is currently available in the following regions:

Argentina, Australia, Austria, Brazil, Canada, Chile, Colombia, Denmark, Ecuador, France, Germany, India, Ireland, Israel, Italy, Japan, Mexico, Netherlands, New Zealand, Peru, Philippines, Poland, Singapore, South Africa, South Korea, Sweden, Switzerland, United Kingdom, United States, and Venezuela.





Turning on Brave Ads

Brave Ads is part of Brave Rewards but you can turn ads off if you'd rather fund your contributions on your own.

Brave's default only shows up to two ads per hour. But if that's not right for you, you can turn it up to five or down to one — or turn off ads, of course. Brave saves seven days of ad history so that you can check back on things you missed, and fine tune the ads you'd like to see in the future.

Brave doesn't want to distract you or disrupt your browsing with ads, so the browser tries to find the exact right moments to show them. Rather than displaying ads on the pages you visit, **Brave's ads are push notifications from your device**. When you decide to click on a notification, you're presented with a full page ad in a new ad tab. But if an ad's not right for you, you can dismiss it.



Brave Ads versus Traditional Digital Advertising

There are some key differences between Brave Ads and traditional digital advertising:

- 1. Brave Ads is private.** Traditional advertising sends lots of personal information to advertisers, ad exchanges, and other entities in order to target ads. This data can be pretty sensitive, including information about your behavior online and off, your browsing history, where you are and where you've been — such as your exact latitude and longitude — among a host of other information. Brave picks ads directly on your device based only on your interests. Your personal information never leaves your browser.
- 2. Brave Ads rewards you for your attention.** Online ads are a race to the bottom to be as distracting and disruptive as possible. Advertisers jealously value your attention, but they

don't give you value for your attention. Brave rewards you in BAT for your attention. When Brave shows you an ad notification, 70% of the BAT from that advertiser goes straight to you, every month.

3. Brave Ads is opt-in, providing people with choice, and brands with certainty. 100% of the budget that brands spend with Brave is placed in front of people with a confirmed interest in advertising.

Brave Ads puts you in control with privacy by design, and does not leak personal data from your device. Paying for attention no longer entails large scale data collection.

If you switch on ads, your Brave browser uses an on-device machine learning model to evaluate and rank your topics of interest. Brave downloads the entire list of ads, so as not to reveal to anyone else which ads it's showing you. Ads in Brave are text, so the whole catalogue is very small and

easy to compress. Your interests are locally matched with the categories in that ad catalog, along with your ad preferences and feedback, to work out exactly which ads are right for you. At the same time, your browser anonymously proves its identity using blinded token technology,¹ effectively cutting out the sorts of fraud which plague conventional online advertising. Brave then verifies a zero-knowledge proof to ensure that the blinded token used as evidence of an ad view is from the correct anonymity set. This ensures that you receive rewards for the ads you see without revealing to anyone — even Brave Software — which ads those are.

Brave's mission is to fix the web by reforming online advertising, which has become invasive and inefficient. The aim is to create a system where ads are once again pleasant and polite. Brave Ads helps fund the web with privacy-preserving ads that reward you for your attention, reconnect you with publishers and brands, and even provide new opportunities to support non-profits. This plan will eventually

¹ The overall privacy model is described in [Brave's technical documentation](#). Additional [cryptographic detail](#) is also available.

let website publishers show Brave Ads on their sites. With Brave, they'll earn 70% of the revenue for those ads. Now, publishers only earn an estimated 35%. Because they opted in, the audience for Brave's ads is far more engaged: Brave Ads sees a click-through rate of 14%, seven times the industry average.²

Brave Ads goes beyond the requirements of the GDPR and CCPA. No personal data is transmitted at any time. Your profile is entirely inaccessible to any company, including Brave.

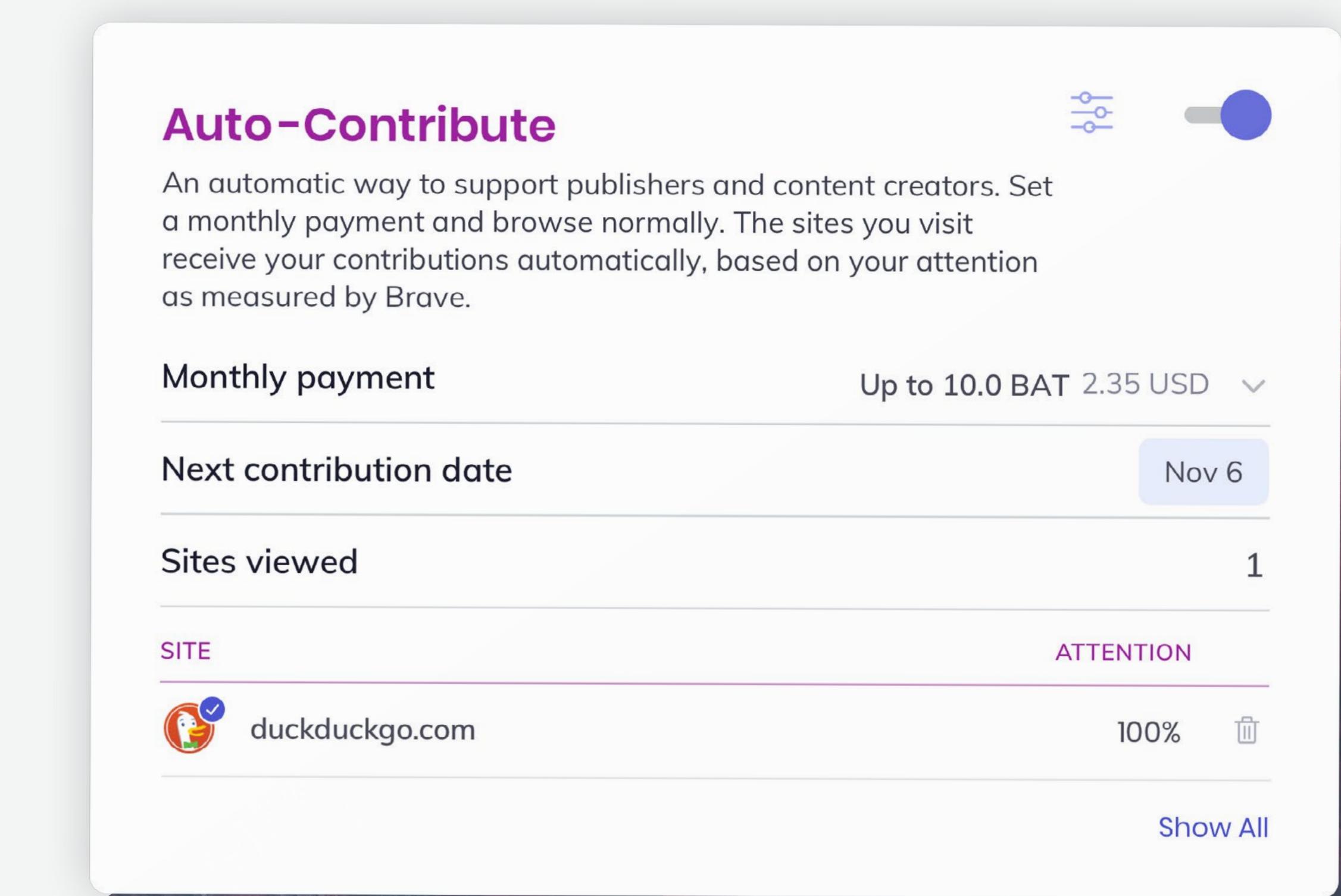
Support the Creators You Love

Most sites wouldn't be here without the revenue earned from targeted advertising. With Rewards, Brave has engineered a privacy-preserving alternative with new options to support the sites and creators you visit and love.

² [There's a more in-depth post about the effectiveness of Brave Ads on the main Brave blog.](#)

Auto Contribute

With Auto-Contribute, you pick an amount to spend on supporting the sites you visit. As you browse, Brave tallies the attention you spend on different sites. That happens locally, in your browser. Nobody else can see your Auto-Contribute list, and nobody else knows what's on it. Every month,



Auto-Contribute

An automatic way to support publishers and content creators. Set a monthly payment and browse normally. The sites you visit receive your contributions automatically, based on your attention as measured by Brave.

Monthly payment: Up to 10.0 BAT 2.35 USD

Next contribution date: Nov 6

Sites viewed:

SITE	ATTENTION
duckduckgo.com	100%

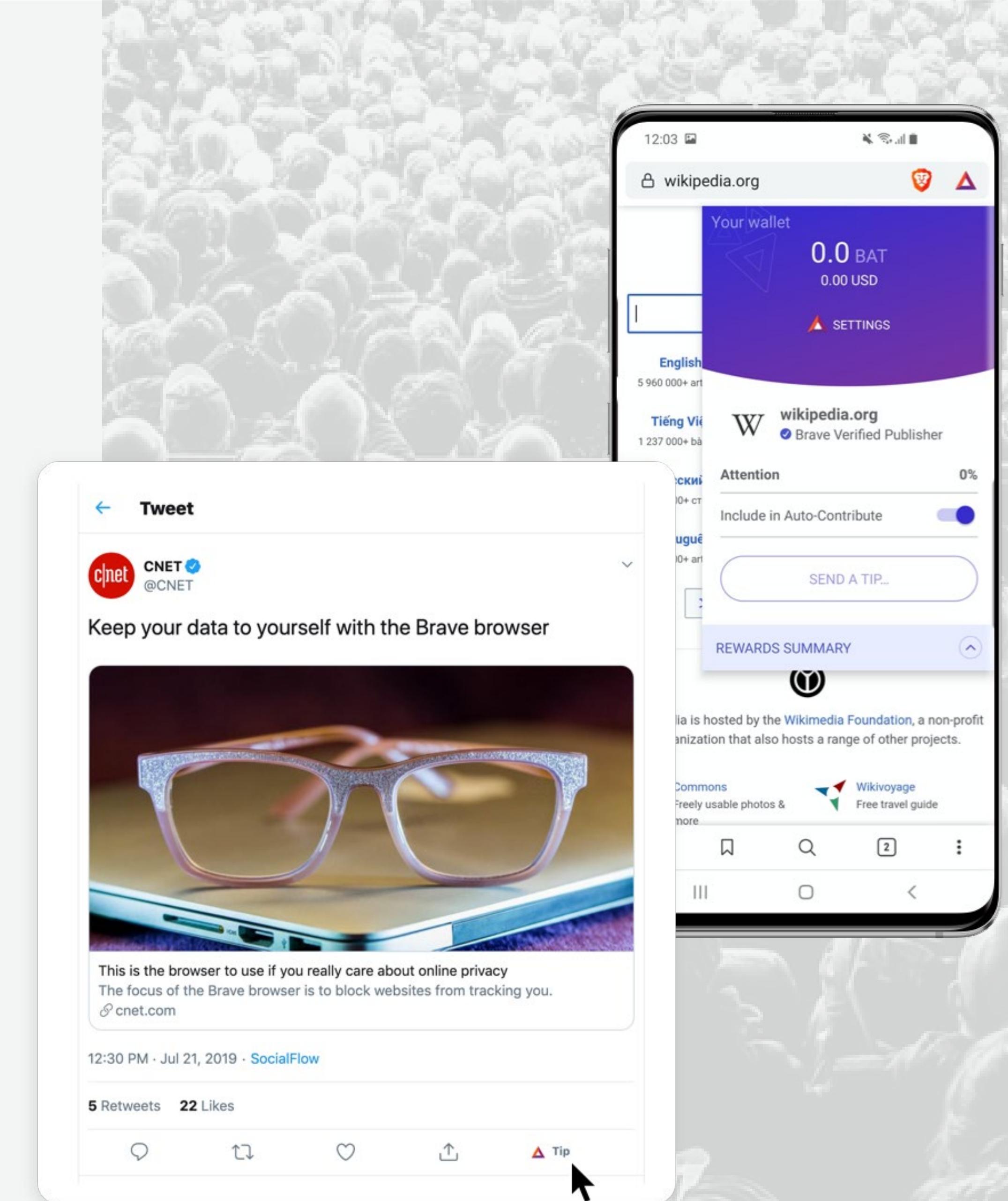
Show All

Brave divides up your budget between the Brave-verified sites you've visited. An anonymous attribution system ensures that nobody can tell which sites you support. All Brave Software can see is how much each site receives and in what size contributions.

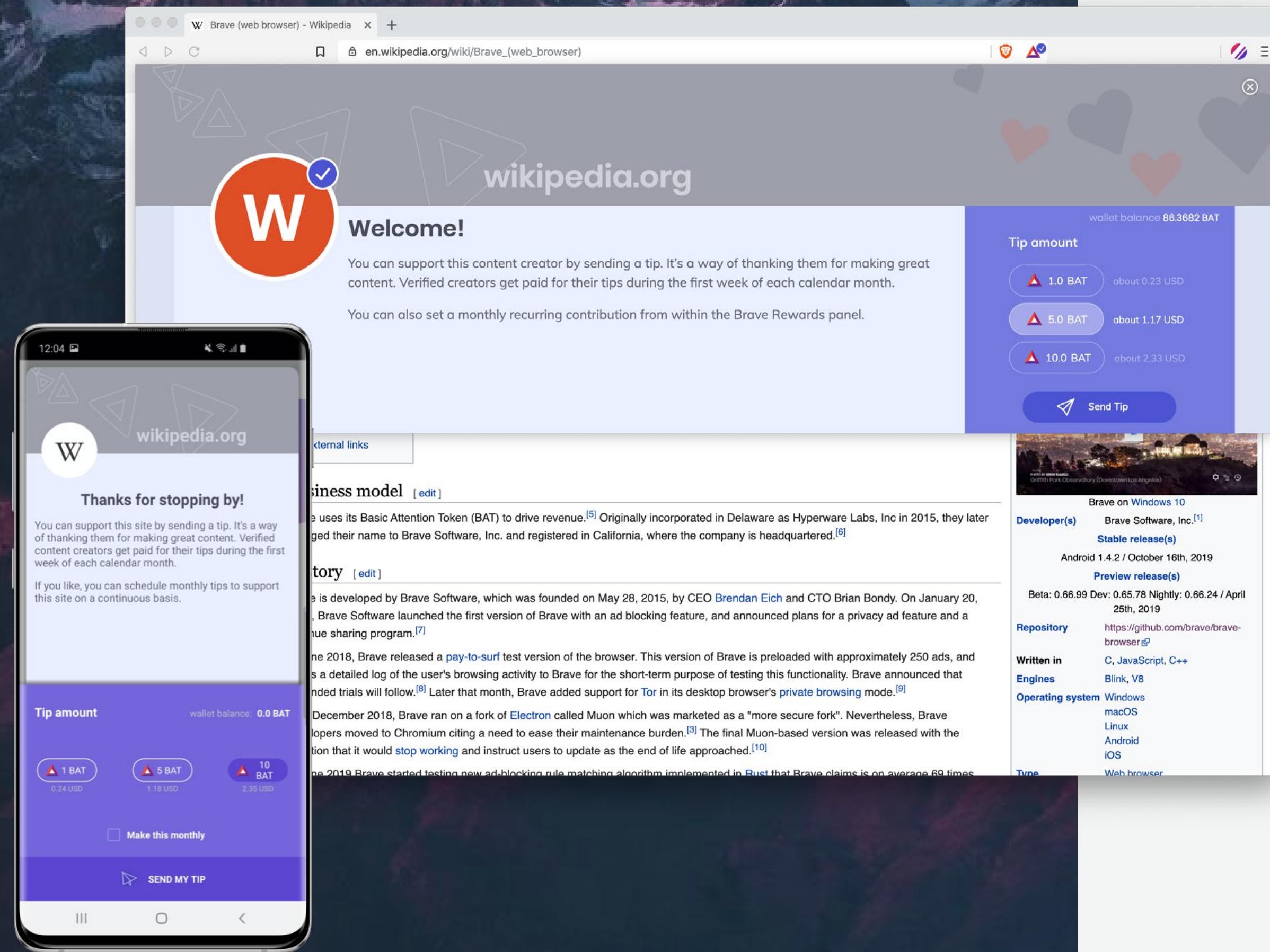
Tips

Sometimes an article, a video, or a tremendous tweet makes you want to reward that creator directly. You can reward the author right away, with instant gratification. And if you give a tip, you can set it to recur every month — handy if you want to support Wikipedia every month no matter how much you need to look up.

You can tip verified websites when you see a checkmark next to the BAT icon in the address bar. You can also tip people on Twitter, Github, YouTube and plenty of other sites. Look for the BAT icon on the individual tweet, post, or video.



Sending Tips



1. Navigate to a web page you'd like to support
2. Click the Rewards icon on the right-hand side of the address bar to reveal the Rewards Panel
3. In the Rewards panel, click on Send Tip...
4. The site's Tipping Banner should now display at the top of the browser
5. In the tipping banner, the domain of the website you're supporting is displayed at the top. You can send 1, 5, or 10 BAT per tip.
6. Choose the amount you'd like to donate, check the box if you'd like to repeat this donation on a monthly basis, then click **Send my tip** to complete the transaction.

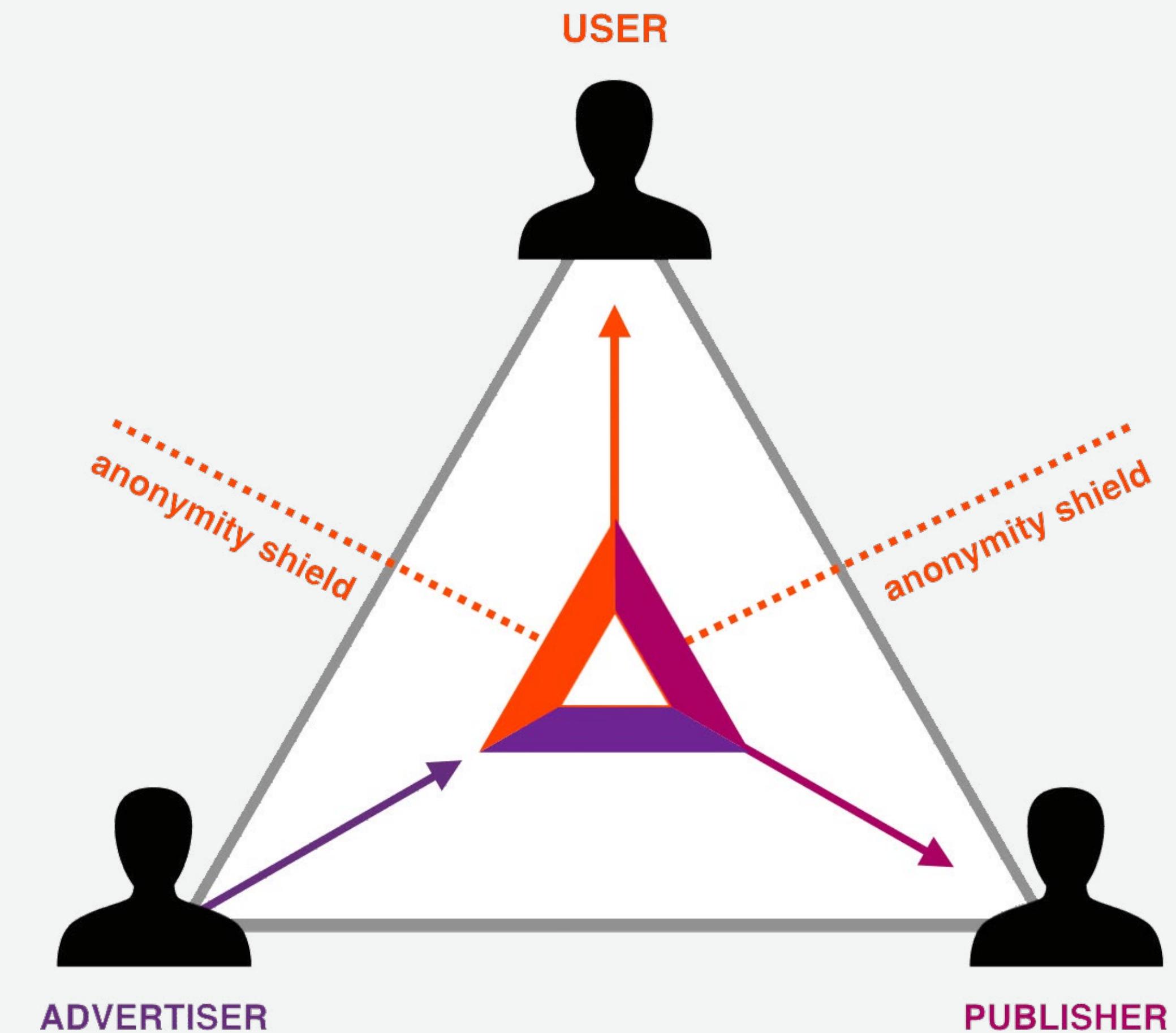
Basic Attention Token

Brave Rewards is built around the Basic Attention Token (BAT), an ERC-20 utility token on the Ethereum blockchain. BAT is designed to value your attention. You can earn BAT by paying attention to opt-in ads, and then you can contribute that BAT to the sites that are worth paying attention to. It's as simple as that.

Brave also partners with Uphold to allow you to convert the BAT you earn from seeing private ads into national currencies or other assets. If you link your Brave Rewards wallet with Uphold, you can add and remove BAT from your wallet. You can transfer the BAT you earn through ads to Uphold. Or if you'd prefer not to see ads at all, you can add BAT directly to your Brave Rewards wallet so that you can contribute to your favorite sites.

When you use BAT within Brave Rewards — as when you support a site through auto-contribute or by sending

a tip — you don't need to sign up, and there's no need to worry about transaction fees or regulations. But if you want to redeem that BAT directly, Uphold makes sure to follow all the appropriate financial rules.

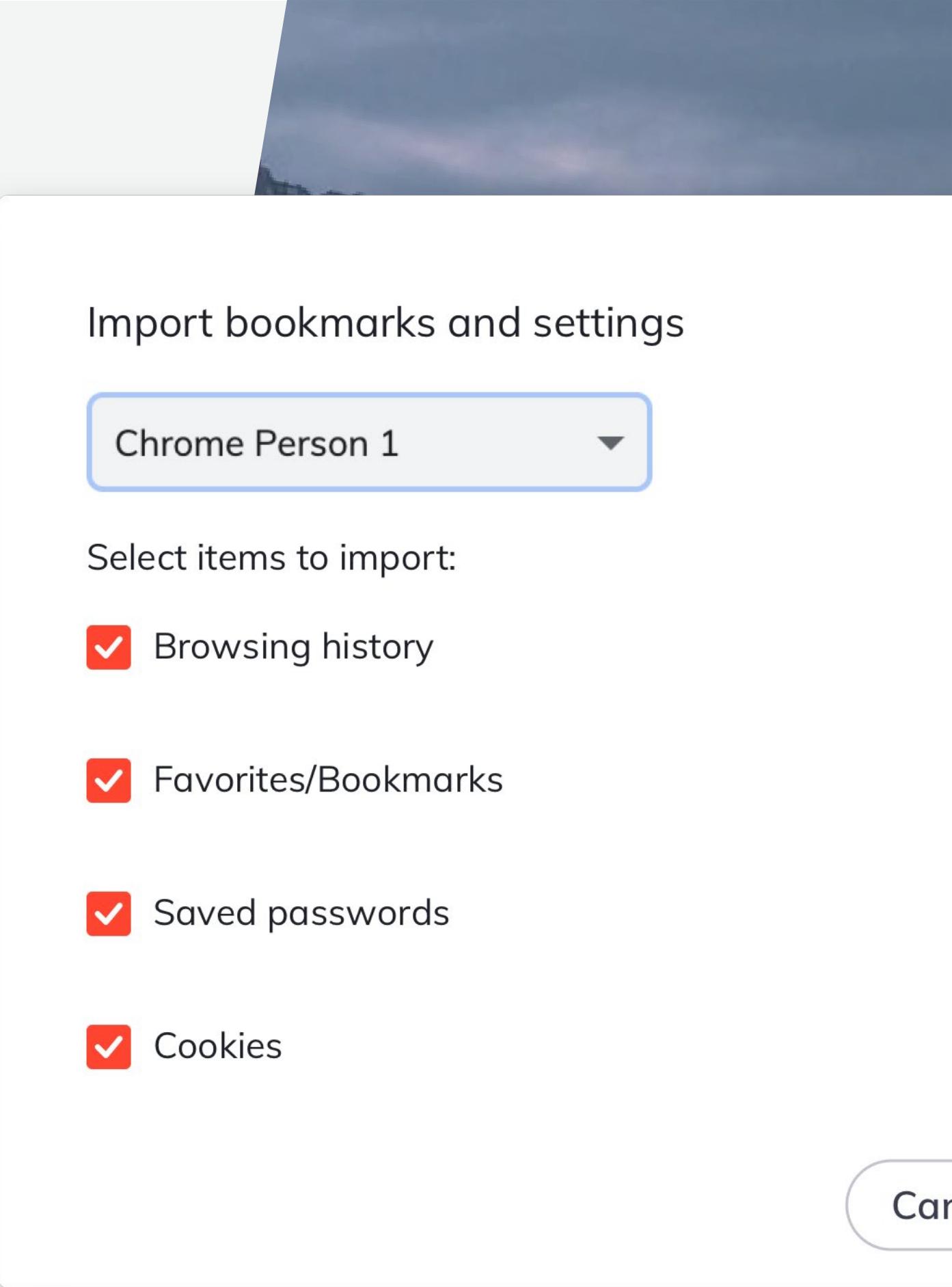
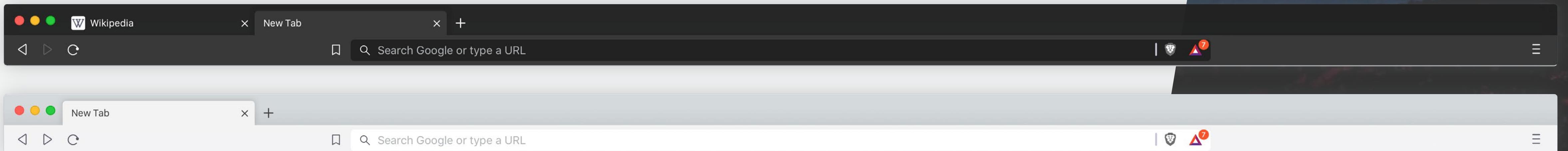


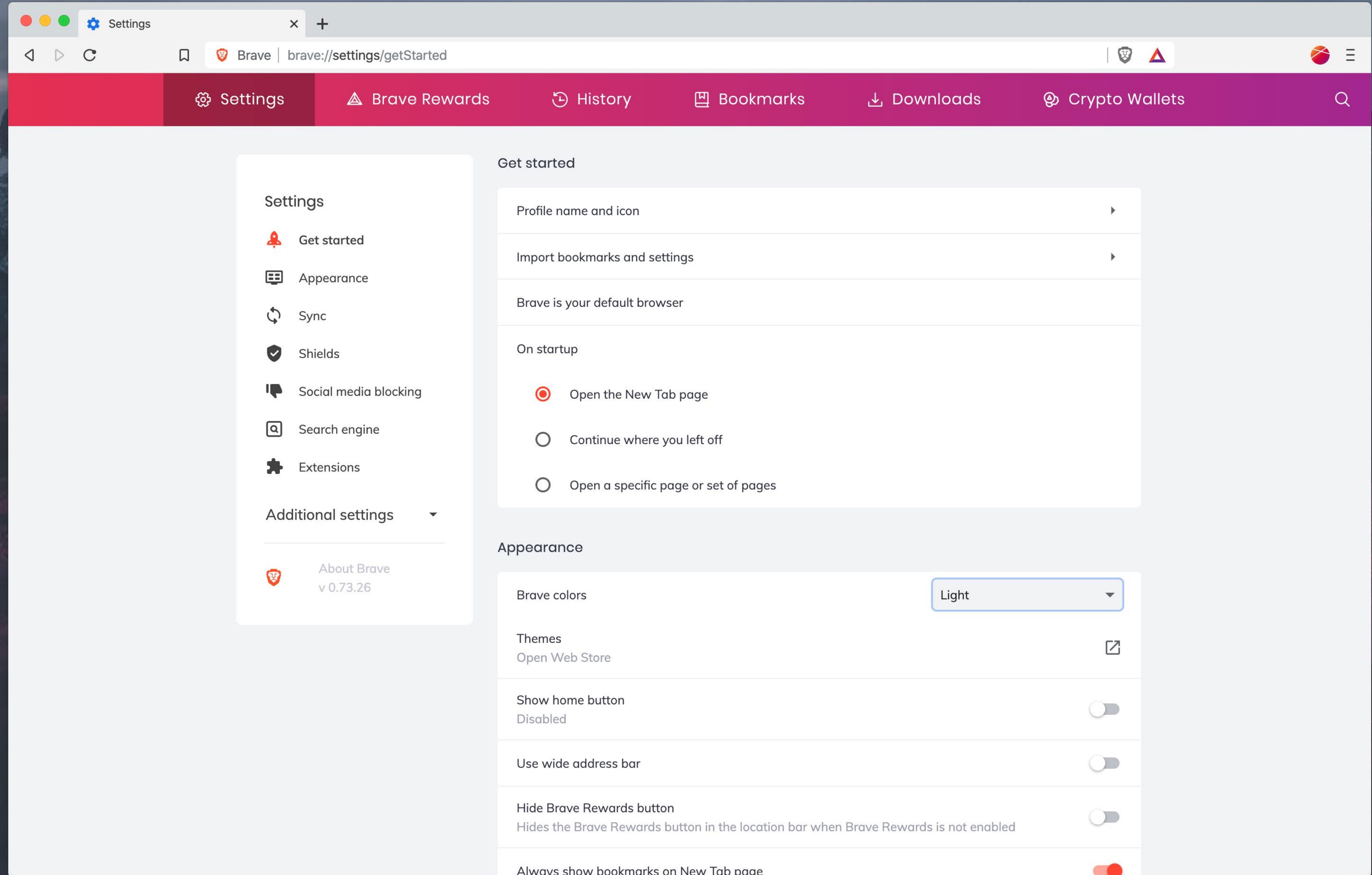
3. Experience, Extensions, & Sync

It's easy to switch to Brave and make it your own

Brave comes with a modern take on a streamlined user interface that you'll find comfortable when switching from Chrome or other browsers. It's easy to import your bookmarks, passwords, cookies, and browsing history and get started right away. It takes less than a minute to switch over to Brave.

Brave has light and dark themes built in so that you can give your eyes a rest now and again. The Brave team added a lot of details like a mute button for tabs, a better organized settings page, customizable new tab page, background video playback, and much more.





The image shows the Brave browser settings interface. The window title is "Settings" and the address bar shows "Brave | brave://settings/getStarted". The main menu bar includes "Settings", "Brave Rewards", "History", "Bookmarks", "Downloads", "Crypto Wallets", and a search icon. A sidebar on the left contains "Settings" with sub-options: "Get started", "Appearance", "Sync", "Shields", "Social media blocking", "Search engine", and "Extensions". Below this is a "Additional settings" section and the "About Brave" link (v 0.73.26). The main content area is titled "Get started" and includes sections for "Profile name and icon", "Import bookmarks and settings", "Brave is your default browser", and "On startup" (with radio buttons for "Open the New Tab page" (selected), "Continue where you left off", and "Open a specific page or set of pages"). The "Appearance" section includes "Brave colors" (set to "Light"), "Themes" (with a "Open Web Store" link), and several toggle switches for "Show home button" (disabled), "Use wide address bar", "Hide Brave Rewards button" (disabled), and "Always show bookmarks on New Tab page" (disabled).

Settings

Brave | brave://settings/getStarted

Settings

Brave Rewards

History

Bookmarks

Downloads

Crypto Wallets

Get started

Profile name and icon

Import bookmarks and settings

Brave is your default browser

On startup

Open the New Tab page

Continue where you left off

Open a specific page or set of pages

Appearance

Brave colors

Light

Themes

Open Web Store

Show home button

Disabled

Use wide address bar

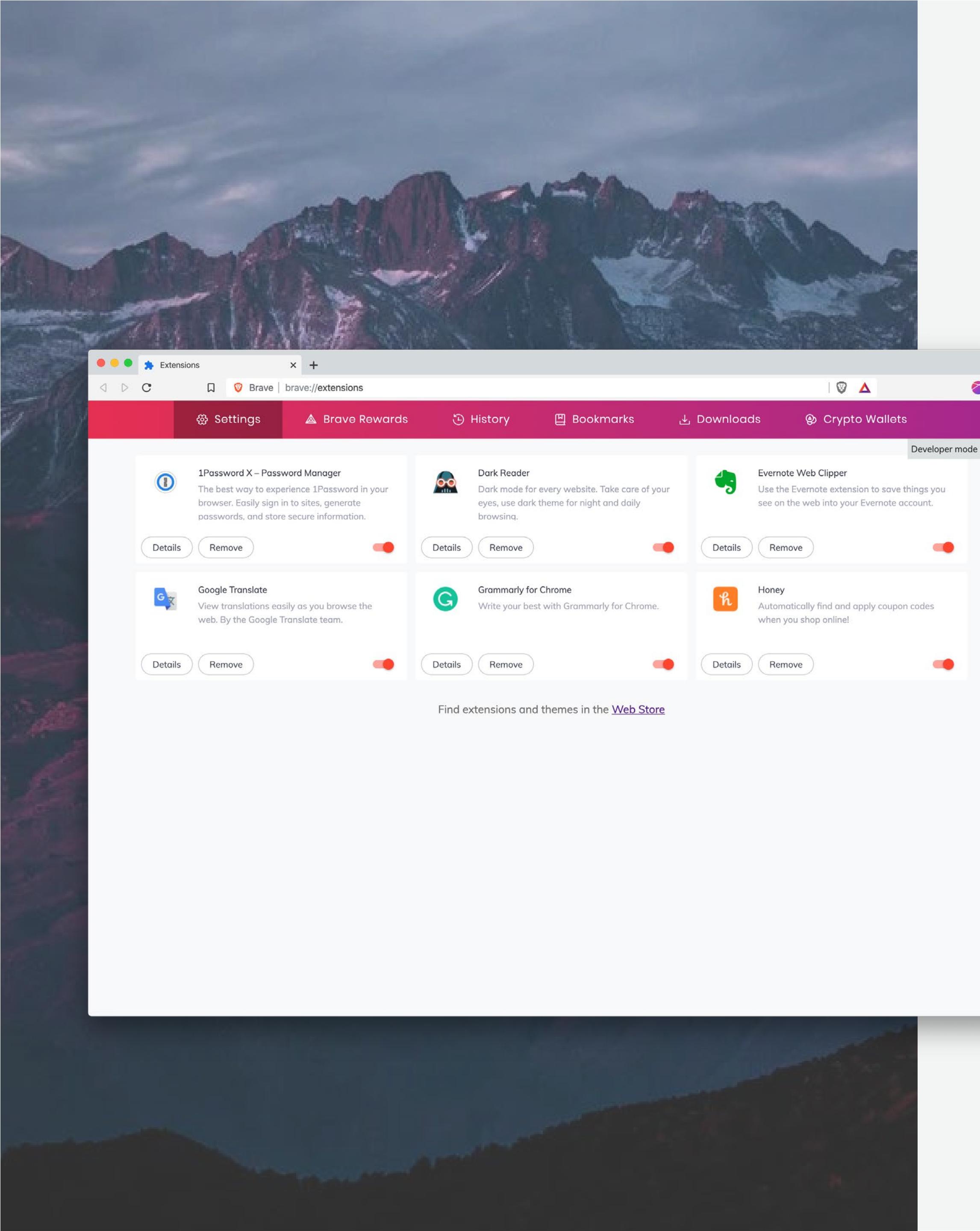
Hide Brave Rewards button

Hides the Brave Rewards button in the location bar when Brave Rewards is not enabled

Always show bookmarks on New Tab page

About Brave

v 0.73.26



Extension Support

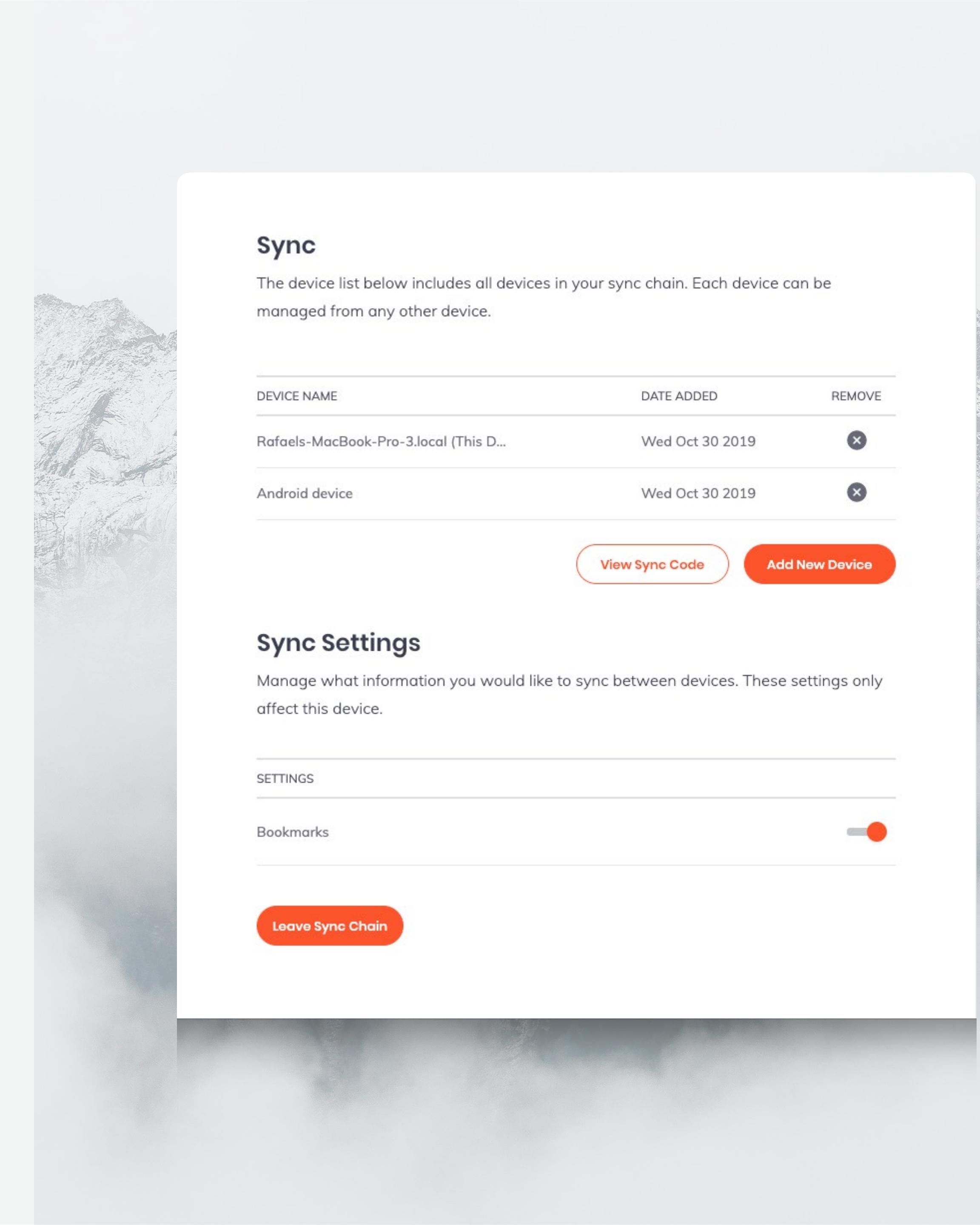
You can also add any other extensions or themes you like. Part of the benefit of being built on a shared open source Chromium core is that Brave shares extensions with all the other Chromium-based browsers — no tinkering needed. Extensions are powerful ways to improve your Brave experience, but that power comes with responsibility.

A malicious or mistaken extension can seriously compromise your privacy & safety. Brave has taken an early look at multiple extensions to make sure they don't have any of the most common problems — and your browser will warn you when you try to install an extension that hasn't been checked out.

Brave Sync

Keep all your devices in sync with total privacy. Brave's sync is fully end-to-end encrypted — nobody can access any of your sync'd information but you. Brave Software doesn't need to know anything about you; all that's visible on the server is an encrypted bundle of information. Only your devices have the key to decrypt it.

To enable Brave Sync on desktop head to the  App Menu > Sync or type in `brave://sync` in the address bar. On mobile go to Settings and select Sync to get started.



DEVICE NAME	DATE ADDED	REMOVE
Rafael's MacBook Pro-3.local (This Device)	Wed Oct 30 2019	
Android device	Wed Oct 30 2019	

Sync Settings

Manage what information you would like to sync between devices. These settings only affect this device.

SETTINGS	<input type="checkbox"/>
Bookmarks	<input type="checkbox"/>

Leave Sync Chain

4. Under the Hood

Built on Chromium

Brave is open source and is built on top of another open source browser design — the Chromium project and the Blink rendering engine. The Chromium Project was established by Google, based on Apple's WebKit. The goal was to take the work Google had done building Chrome and create a shared core for any browser which wants to use it. Chromium is now the building block for most contemporary web browsers. Using Chromium as a foundation lets Brave focus a small team on building the powerful features which set the browser apart rather than the core web-browsing experience shared by all browsers.

Brave's emphasis on security means a priority on fixing security issues. Upstream Chromium releases are always integrated within a few days of them being made available

to developers. This ensures that people using Brave are always running the latest and safest software.

Chromium contains a fair bit of Google-specific code which is designed to connect to Google services. Brave has turned all of that off.¹ No Google accounts, or Google sync, or Google telemetry, or Google search suggestions, or any of the dozens of ways that unmodified Chromium talks to Google. Brave won't connect to Google in the background. Though you can of course still search at google.com if desired.

Faster and Lighter

Most websites try to send you huge amounts of data. But only a little of it is the stuff you actually want to see. The rest is advertising, trackers, and other material which takes time and data to download and even more time to run. Because Brave blocks all of that out of the box, it's considerably faster than other browsers. And that's doubly true on slower or

¹ [Brave's technical documentation](#) has more detail about all of the Google functionality that's been stripped out.

laggier connections where every bit counts, or older devices where every stray CPU cycle or bit of RAM rapidly adds up.

All that additional bloat which Brave blocks takes extra time and data to download, occupies space in memory, and needs more CPU time and power to process. The stuff Brave protects you from doesn't just spy on you, it also wastes your time, your data plan, your system resources, your battery life, and your attention.

By blocking directly in the browser, Brave is considerably more efficient about it. For safety and practicality, extensions in modern browsers don't have quite the same level of control as the browser itself. Many ad-blocking extensions still load much of the ad content and code, but just don't show or run it. So you still take most of the bandwidth, memory, and performance hit. And running a bunch of somewhat-overlapping privacy and security extensions means that other browsers might be doing the same anti-tracking work several times. With Brave, blocking tracking isn't an after-market

² Load time was measured by visiting a sample of news articles from different sites and measuring time until the point after which there's no network activity for five seconds. This test was run from a cold-cache start on a high-speed connection.

add-on, it's seamlessly integrated. The defenses in Shields are coordinated together to protect you efficiently.

Because Brave is based on the same core web rendering engine and internals as Chrome and several other browsers, synthetic performance tests tend to give the same results when comparing Brave and Chrome. Brave's advantage isn't that it's better at running complex JavaScript or doing advanced DOM manipulation — all Blink-based browsers score roughly the same at this, Brave included. Brave's advantage is having to do far less work because it only loads the parts of pages that matter. So getting the same marks on synthetic benchmarks doesn't reflect Brave's real-word performance.

On actual sites, Brave's Shields make the web 3x to 6x faster. In realistic testing with actual web pages, Brave on macOS completely loads² news articles in less than 16% of the time taken by Chrome. On Windows, Brave takes less than 30% of the time Chrome takes to load the same

pages. Brave saves an average of about 27 seconds per page load against Chrome.

In the same test, Brave used 58% less data than Chrome to load those same pages. Brave also uses less memory³ than Chrome, which makes everything else on your computer feel that much faster. With five of these news sites⁴ open, Brave takes up about 906MB, while Chrome is 1530MB and Firefox is 1712MB. That's an improvement of 40% over Chrome and 47% over Firefox.

On an Android device, Brave fully loads those same in less than 19% of the time it takes Chrome, and uses only 36% of the data. Every page you load in Brave rather than Chrome saves you anywhere from 4 to 31 seconds and a little more

than 2MB of data. If you read a lot of news,⁵ you could expect using Brave on your Android device to save you anywhere from 3 minutes up to 25 minutes of waiting and more than 100MB of data. Depending on your usage, if you're on Verizon's 6GB prepaid plan, using Chrome all month might put you over your data limit while Brave wouldn't even use half your data. And all that extra data is wasted loading invisible code that spies on you.

You don't just spend less time waiting for pages to load; Brave also extends your phone's battery. All those trackers require processor power to run, and all the time spent waiting for pages to load just has your device's screen showing white. Brave uses 40% less power⁶ than other Android browsers. Over the lifetime of your phone, that improvement will keep

³ Brave uses slightly more memory than Chrome with no sites open (297MB for Chrome vs. 167MB for Brave), but that difference goes away as soon as you open the first web page and Shields starts blocking things.

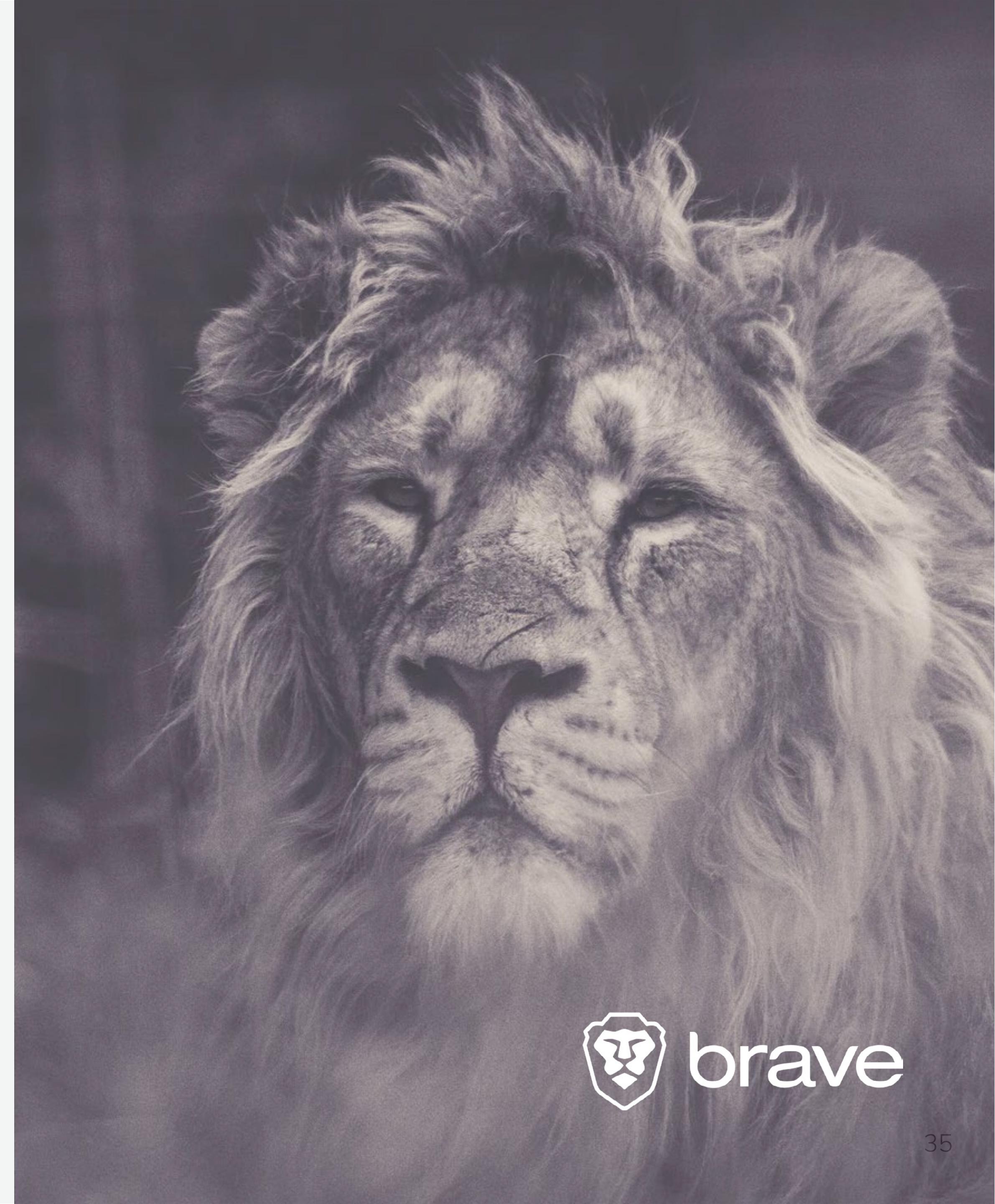
⁴ We randomly divided the pages into sets of five. Each browser opened each set three times, and we averaged the per-set median across all the sets.

⁵ Based on reading 50 news articles per day.

⁶ <https://brave.com/brave-saves-batteries/>

your battery working better for longer. So over time, you'll find the positive battery life impact of using Brave get larger and larger.

These are the baseline performance benefits which can be measured directly on your device. But Brave also conserves your attention. We don't know enough about attention and distraction to tell you how much more effective web browsing is without flashing ads all over every page. But anyone who's been annoyed by the inconsiderate ads on the web knows that protecting your attention is a significant gain.



5. Web of Tomorrow

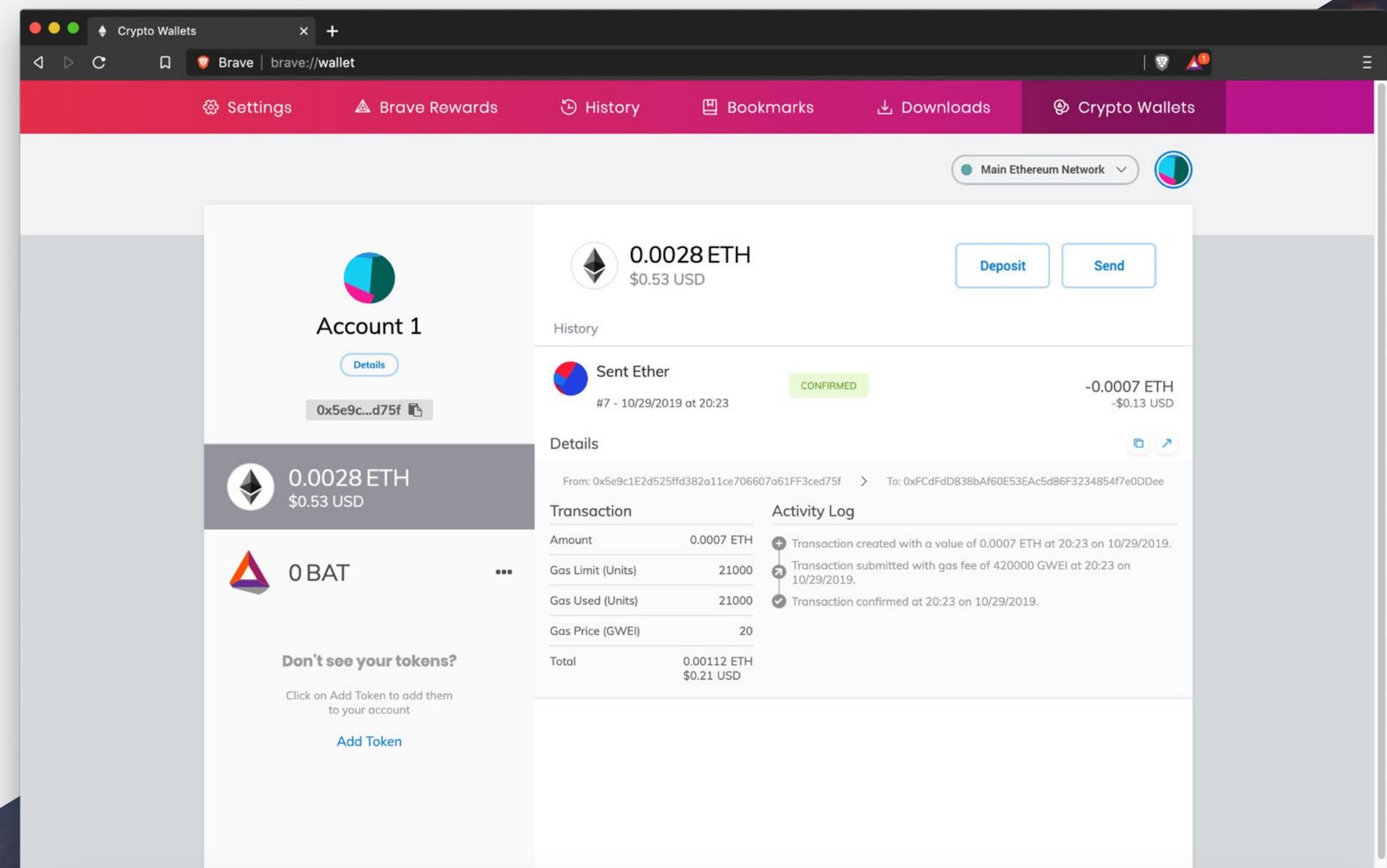
A glimpse of the distributed web the future has in store

Brave is built around the vision of a web which works for the people who want to make wonderful things and find delightful information. That means a web where intermediaries control less of your experience and you can interact with information, media, and even financial assets directly.

That future isn't here yet, but it's closer than it seems. Brave is already putting together the building blocks of that web today.

Crypto Wallets

Brave Rewards uses BAT for exactly what it sounds like: you're rewarded for your attention, and you can reward creations worthy of your attention. It's built with a laser focus on supporting the wide world of the web through direct private contributions.



But that barely scratches the surface of what we can do with blockchain technology. Crypto Wallets, which is available via the  App Menu > Crypto Wallets, is Brave's first exploration into that wider world of distributed universal ledgers. Right now, Crypto Wallets allows you to send, receive, and transact in all sorts of Ethereum assets; that's table stakes. It also lets you use Dapps: smart contracts which combine Ethereum's intelligent blockchain with all sorts of other application layers from distributed storage to cute web apps which let you create adorable cats.

WebTorrent

WebTorrent imagines media distribution without the need for centralized servers. As long as other people are also watching the video you want to see, you can get different bits and pieces from all those other people — no central-

ized storage required. WebTorrent combines the principles of decentralized distribution found in BitTorrent and combines them with the familiar interfaces of the web.

IPFS Companion

The Interplanetary Filesystem is an ambitious name for an ambitious project: making the web less reliant on core infrastructure. Rather than going to a specific server to retrieve any particular webpage, you look for it among many different storage nodes. They could be dedicated to archiving that material, or just another browser like you. Brave's IPFS companion lets you try out IPFS today. Over time, hopefully more and more is available on IPFS and there's less to worry about if a particular server goes away or a distant network connection is cut. Brave's IPFS support is built-in; there's no need to install or configure a separate tool to let you use IPFS.

Onion Sites

Brave's private windows with Tor let you access Onion sites. With these sites, the connection is routed entirely over the Tor anonymity network. This gives you a secure and anonymous way to access a site, and makes the site much harder to block or censor. This technology is used heavily in whistleblowing tools like SecureDrop.¹ News sites like the BBC,² private search engines like DuckDuckGo,³ and even social networks like Facebook⁴ use Onion services to support censorship-resistant access.

¹ secretdrop5wyphb5x.onion

² bbcnewsv2vjtpsuy.onion

³ 3g2upl4pq6kufc4m.onion

⁴ facebookcorewwwi.onion



6. Appendices

A. Technical info

System Requirements

Windows 7, Windows 8, Windows 8.1, Windows 10 or later

An Intel Pentium 4 processor or later that's SSE2 capable

OS X Yosemite 10.10 or later

64-bit Ubuntu 16.04+, Mint 17+, Debian 9+, openSUSE 15+, Fedora

28+, CentOS/RHEL 8+

An Intel Pentium 4 processor or later that's SSE2 capable

Android 4.4+

iOS 12

Available Languages

Amharic, Arabic, Bengali, Bulgarian, Catalan, Chinese Simplified, Chinese Traditional, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Gujarati, Hebrew, Hindi, Hungarian, Indonesian, Italian, Japanese, Kannada, Korean, Latvian, Lithuanian, Malay, Malayalam, Marathi, Norwegian, Persian, Pilipino, Polish, Portuguese-Brazil, Portuguese-Portugal, Romanian, Russian, Serbian, Slovak, Slovenian, Spanish, Spanish-Latin America, Swahili, Swedish, Tamil, Telugu, Thai, Turkish, Ukrainian, Vietnamese.

B. Additional Resources

About Brave

Brave Software's fast, privacy-oriented browser is built on top of the first global private ad platform. Brave is resetting the web for users, publishers and advertisers. Users get a

less cluttered and speedier web experience, publishers increase their revenue share, and advertisers receive better conversion. When users opt-in to see privacy-preserving Brave Ads they received a frequent flier-like token that they can contribute back to publishers. The Brave solution is a win-win for everyone who has a stake in the open web and who is weary of giving up privacy and revenue to the ad-tech intermediaries. Brave currently has 8 million monthly active users and over 300,000 Verified Publishers. Brave Software was co-founded by Brendan Eich, creator of JavaScript and co-founder of Mozilla, and Brian Bondy, formerly of Khan Academy and Mozilla.

Basic Attention Token

Official website: <https://basicattentiontoken.org>

Community website: <https://batcommunity.org>

Other Brave Links

- » [Brave reaches 8 million monthly active users and delivers nearly 400 privacy-preserving ad campaigns](#)
- » [Brave Partners with Uphold to Launch Wallet That Rewards Users for Browsing](#)
- » [Brave Tops Browser First Run Network Traffic Results](#)
- » [Tip with Brave](#)
- » [Brave Ads on Android](#)
- » [Improved Ad Blocker Performance](#)
- » [Brave Ads Primer](#)
- » [Yan Zhu & eV Quirk — Blockchain Service Primer I: Browser, Payment, Content, & Social Media](#)
- » [The coming privacy-by-default era: Brave and the Basic Attention Token](#)

C. Testing info

Test summary

The desktop measurements were scripted and the scripts used are available in <https://github.com/brave-experiments/browser-comparison-toolkit> so that you can check our work. The macOS tests were run on a 2015 model with an Intel i5 CPU and 16GB RAM, running macOS 10.14.4. Windows tests were run on a Lenovo IdeaPad 110 with an Intel i3 CPU and 8GB memory, running Windows 10. Tests were executed on a fresh user account with default settings. Only the browser being tested was running. The browser was stopped in between each run, and system memory and disk caches cleared with `sudo purge` on macOS and `%windir%\system32\rundll32.exe advapi32.dll,ProcessIdleTasks` on Windows. The Android tests were run on a Samsung J7 Duo.

Memory measurements used each platform's native tools for memory reporting. Tests involving multiple pages open each page sequentially, waiting for 5 seconds before opening the

next page and finally waiting for 30 seconds after opening the last page before measuring memory use.

Browser load performance and bandwidth on desktop were tested using [Browsertime](#). Load time was measured until there was no network activity for five seconds, measuring from first network request until the last one. Data usage was calculated by adding up the size of the browser's reported transfers.

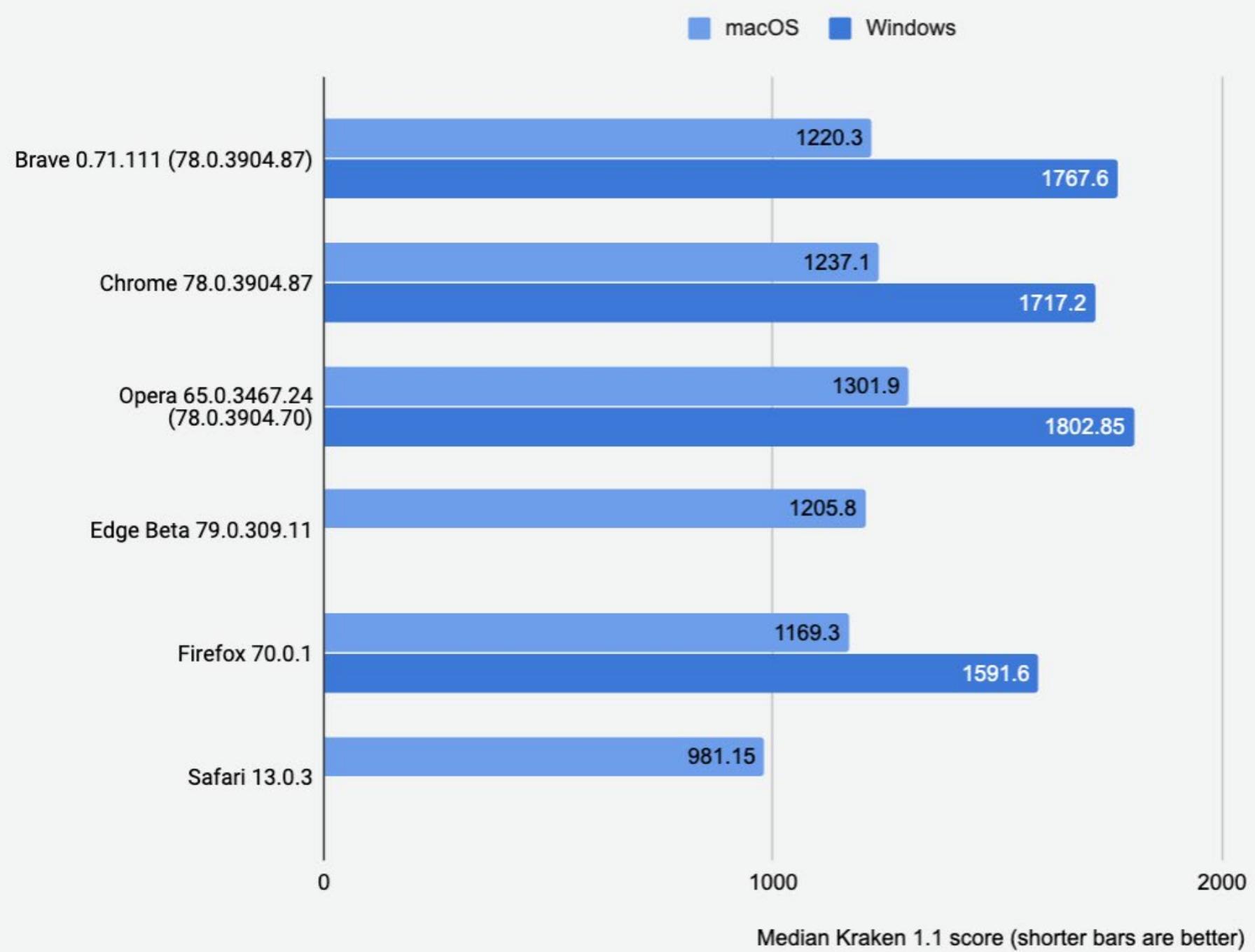
Each measurement scenario was repeated three times on desktop, and four times on Android, taking the median. Each browser was restarted with a fresh profile after every run.

Synthetic test results

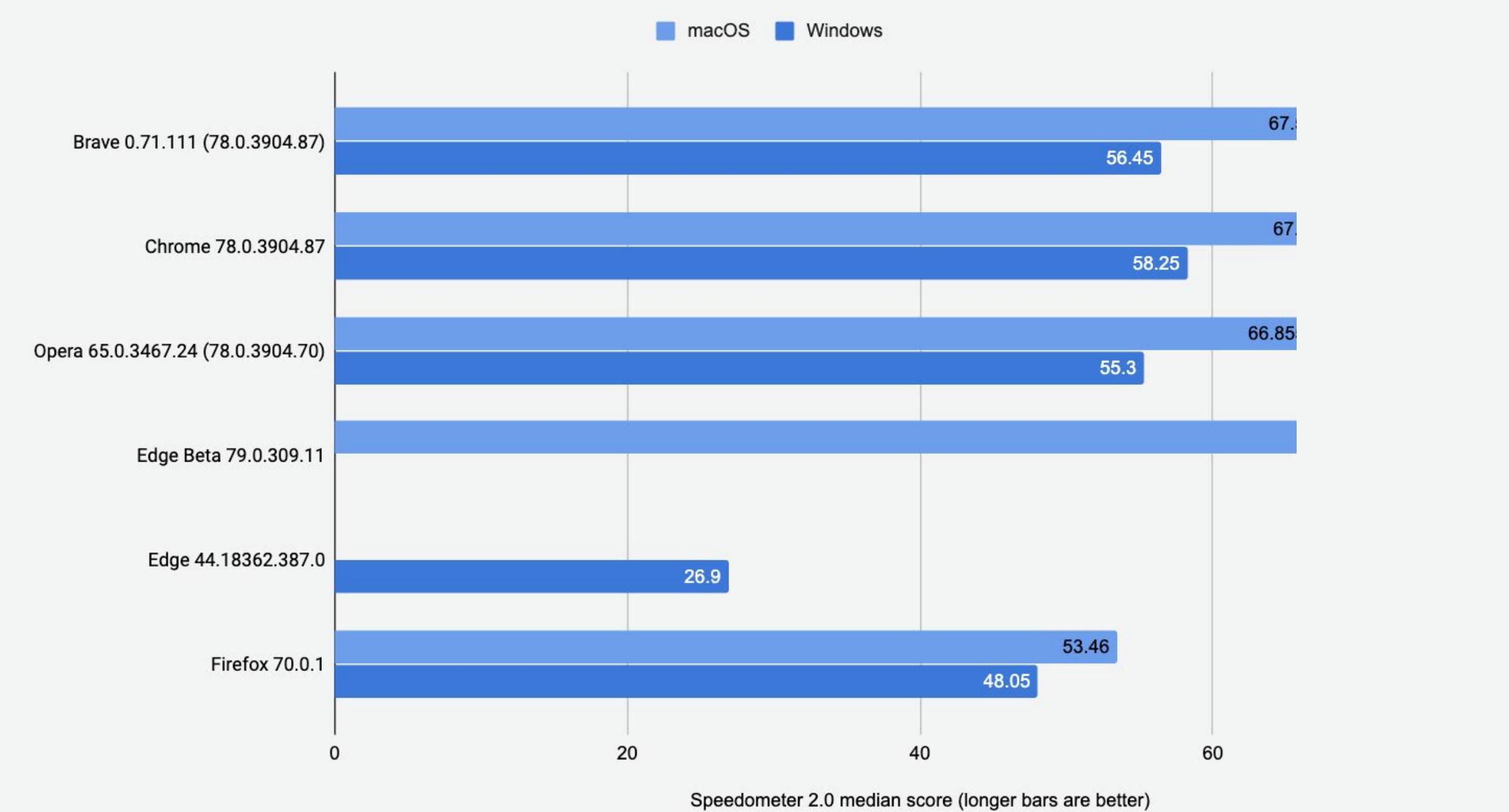
Brave's performance on synthetic benchmarks is similar to that of Chrome and other Chromium-based browsers such as Opera and Edge, since these tests measure the underlying browser engine's abstract performance. **In real-world usage scenarios, Brave does much better** — see page 8. "Performance Overview."

Here are some synthetic benchmark showing the expected similarity. Note that lower scores on the Kraken test are better, while higher scores are better on the other three tests.

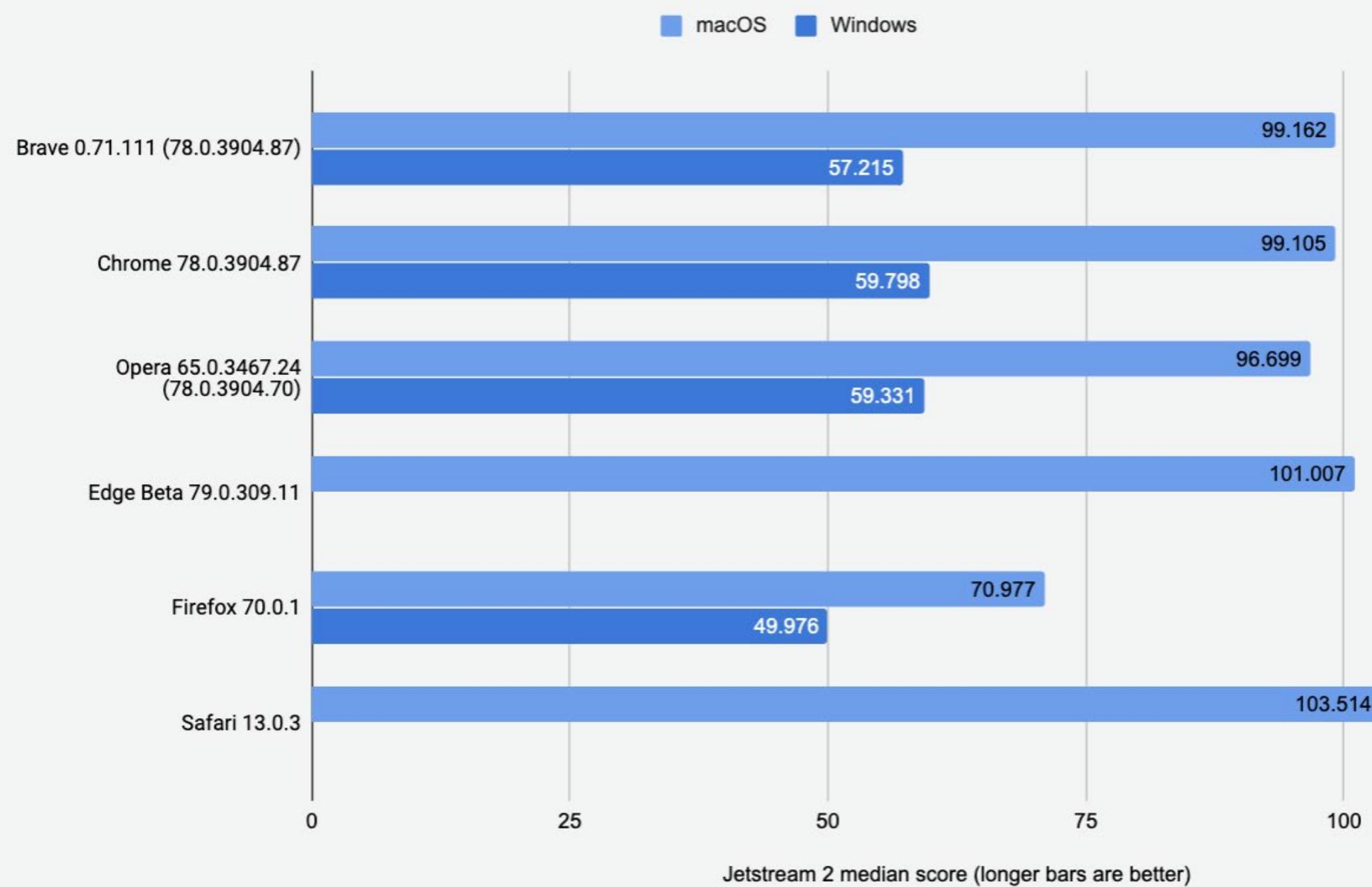
Kraken 1.1



Speedometer 2.0



Jetstream 2



BaseMark Web 3.0

